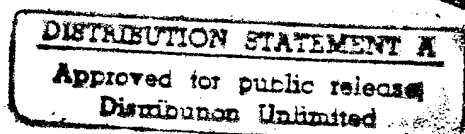
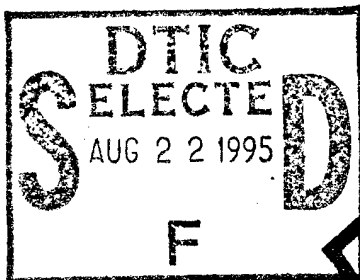


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INSTALLATION RESTORATION
PROGRAM
PRELIMINARY ASSESSMENT / SITE
INSPECTION
VOLUME II
APPENDICES

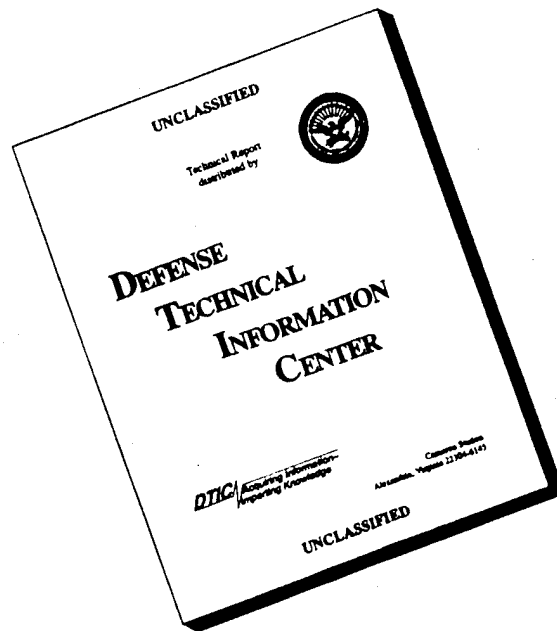
220th ENGINEERING INSTALLATION SQUADRON
ZANESVILLE AIR NATIONAL GUARD STATION
OHIO AIR NATIONAL GUARD
ZANESVILLE, OHIO
NOVEMBER 1994



AIR NATIONAL GUARD READINESS CENTER
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INSTALLATION RESTORATION PROGRAM

PRELIMINARY ASSESSMENT / SITE INSPECTION

VOLUME II

**220th ENGINEERING INSTALLATION SQUADRON
ZANESVILLE AIR NATIONAL GUARD STATION
OHIO AIR NATIONAL GUARD
ZANESVILLE, OHIO**

MARCH 1995

Prepared For

**AIR NATIONAL GUARD READINESS CENTER
ANDREWS AFB, MARYLAND**

Prepared By

**Operational Technologies Corporation
4100 N.W. Loop 410, Suite 230
San Antonio, Texas 78229-4253
(210) 731-0000**

APPENDIX A

HAZARD RANKING SYSTEM (HRS) "DATA REQUIREMENTS FOR FEDERAL FACILITY DOCKET SITES" PACKAGE

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PA/SI DATA REQUIREMENTS FOR FEDERAL FACILITY DOCKET SITES

Zanesville ANGS, Zanesville, Ohio

1. Supply copies of all sampling data, on-site and off-site, including location map, detection limits (see definitions below), raw data sheets, QA/QC documents, date(s) sampled, analytical method(s) used, well or boring logs, and sampling technique(s).

All field screening results are presented in Appendix C. All laboratory analytical reports are presented in Appendix E.

2. Locate and identify on a map all known or suspected sources (see definition below). Supply all information about source(s) such as: dates of operation, use, or spillage; amounts of material deposited, stores, or spilled; dimensions of source(s); known or suspected hazardous substances (see definition below), etc.

This information can be found in Section 4.2 of the PA/SI Report.

3. Provide a description of all aquifers beneath the site, including description of overlying materials, depth first encountered thickness, and composition.

This information can be found in Section 3.5 of the PA/SI Report.

4. For each source, choose one description from Table 1 that describes the groundwater contaminant. Provide complete documentation (i.e., engineering diagrams, photographs (originals) as to why the source meets that description and not any other in the Table.

A groundwater investigation has not been conducted because groundwater was not encountered above bedrock. Therefore, the status on groundwater contaminant has not been determined.

5. Provide the location of all drinking water wells in all aquifers beneath the site in 4-mile radius from the site (property boundary) by HRS distance ring and locate the wells within a one-mile radius on a 7.5 minute topographic map. Provide

information on depth of well(s), screening interval(s), depth of aquifer(s) encountered, population served for multiple wells (i.e., municipal system), provide the number of wells, location of all wells (regardless of 4-mile limit), average annual pumpage of each well (regardless of 4-mile limit), and total population served by system. Include information on all standby wells.

This question does not apply since there are no public wells within a 4-mile radius of the site. (Source: Zanesville Health Department)

6. **Provide information and location (on 7.5 minute topographic map) of wells within 4 miles that are used to irrigate five or more acres of commercial food or forage crops, or watering of commercial livestock, or ingredient in commercial food preparation, or supply for aquaculture, or supply for a major or designated water recreation area, excluding drinking water use.**

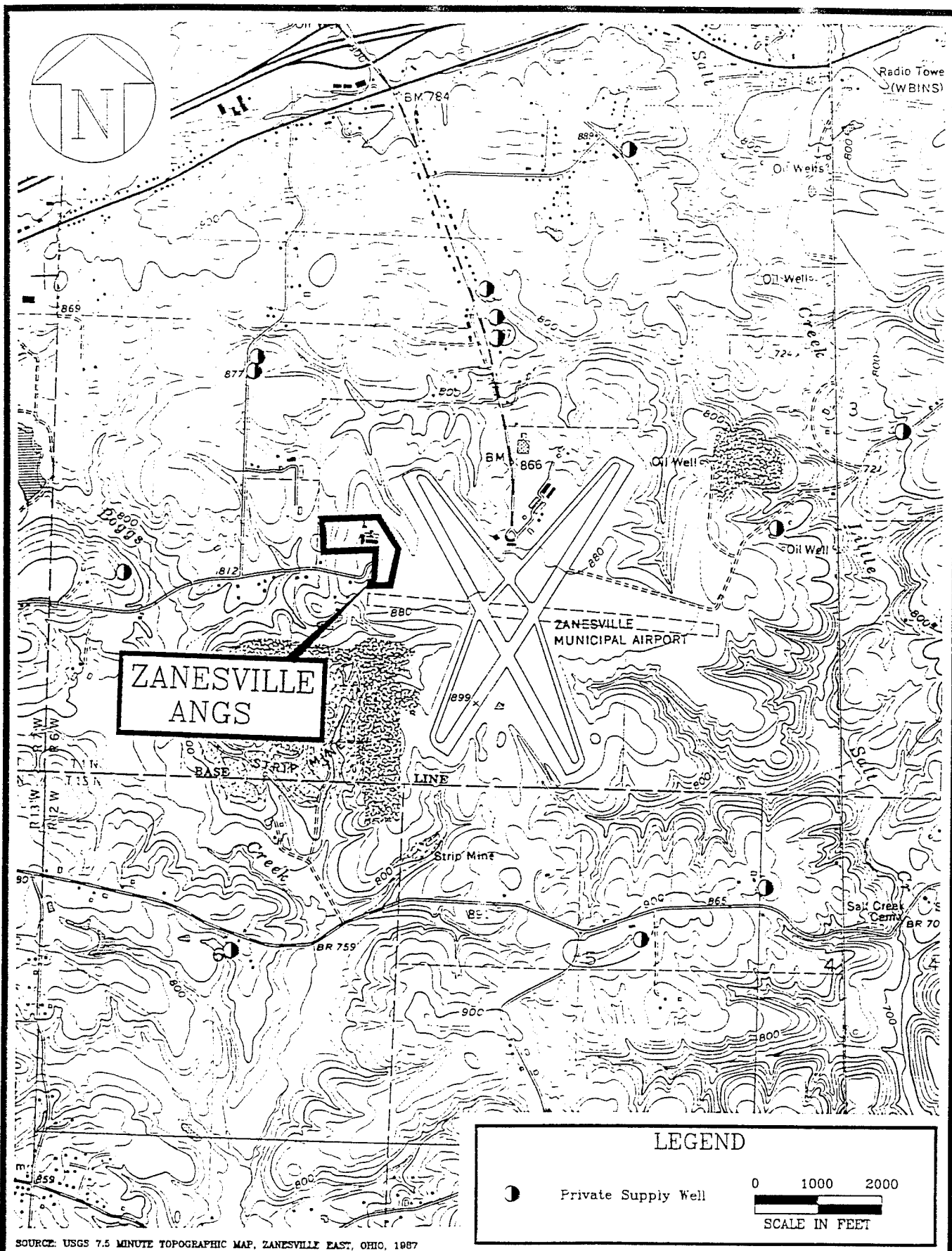
Approximately 15 private wells exist within a 1-mile radius (Figure A.1) and approximately 19 private wells exist within a 4-mile radius. Copies of the well logs have been provided. (Source: Ohio Department of Natural Resources, Division of Water)

7. **Provide average number of persons per residence for county (or counties) that site is located in per the U. S. Census Bureau.**

The average number of persons per residence for Muskingum County is 2.61. (Source: 1990 Census; State Library of Ohio)

8. **Identify and locate all surface water bodies within two miles of the site marking off the drainage routes (shown on 7.5 minute topographic map) from each source to applicable surface water bodies. Provide the average annual cubic feet per second flow for each surface water body within 15 miles downriver or radius from the point of probably entry into surface water. For lakes, provide information on inflow and outflow.**

The surface water bodies that are located within two miles of the site are Boggs Creek and Little Salt Creek. Several attempts were made to obtain information on the average annual cubic feet per second flow but none of the agencies contacted (Zanesville Water Division, Agriculture Division, and the Soil Conservation Service) could provide the information or tell us where to find it. Figure A.2 shows the drainage route from the site.



DRAFT
FIGURE A.1

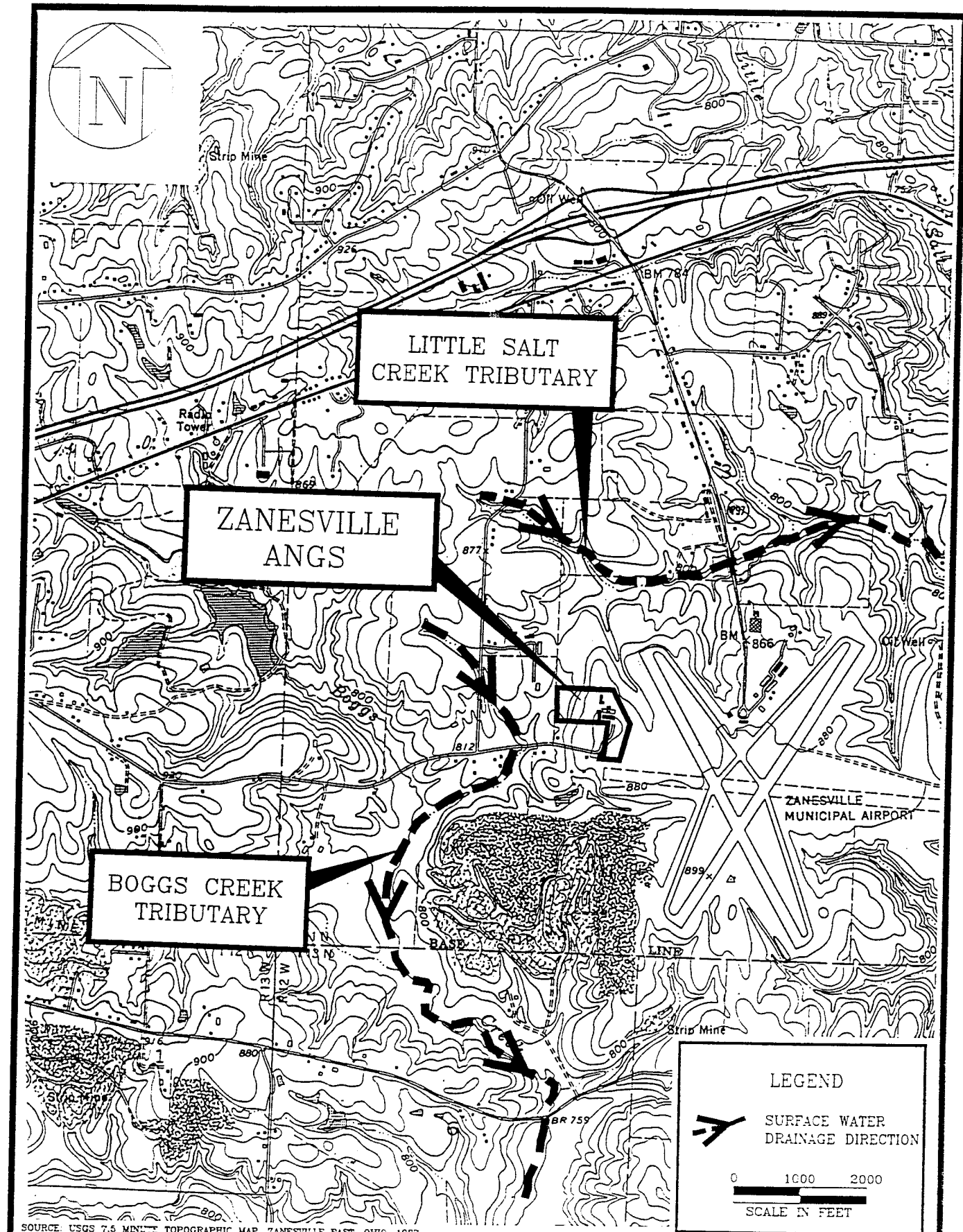
P\ZANES\PRIVEL

PRIVATE WATER WELLS
WITHIN 1 MILE RADIUS OF ANG

220th EIS, Zanesville ANG
Zanesville, Ohio

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SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, ZANESVILLE EAST, OHIO 1987

DRAFT
FIGURE A.2

P: ZANESVILLE SURFDRAN

SURFACE WATER DRAINAGE
FROM ANG LOCATION
220th EIS, Zanesville ANG
Zanesville, Ohio

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9. For each source, choose one description from Table 2 that describes the surface water containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.

All sources: no evidence of hazardous substance migration from source areas and no maintained engineered cover or run-on control or runoff management system.

10. Provide the number of acres in each drainage basin.

The total number of acres in the Little Salt Creek drainage basin is 76. (Source: Ohio Department of Natural Resources)

11. From Table 3, choose the predominant soil group (surface soil) which comprises the largest total area within each drainage area.

The best soil description for this site is: Moderately fine-textured soils with low infiltration rates consisting mostly of silty loams.

12. Provide the two year, 24-hour rainfall.

The two year, 24-hour rainfall is 2.25". (Source: National Climatic Center)

13. From Table 4, choose the floodplain category for each source (supply Federal Emergency Management Agency floodplain map) and determine if each source meets the criteria from Table 5 (engineer's certification).

The floodplain category that best describes this area is: None of the above. This site is located outside the 500-year floodplain. (Source: Federal Emergency Management Agency Map)

14. Provide the location of all drinking water intakes with 15 downstream miles (rivers) or 15-mile radius (lakes, bays, etc.). Provide information on population served. For multiple intakes (i.e., municipal system), provide information on the number of intakes, location of all intakes (regardless of 15-mile limit), and total population served by system. Include information on all standby intakes.

This question does not apply since surface water is not used for the above purpose.
(Source: Zanesville Water Division)

15. **Provide information and location of intakes within 15 miles downriver (radius in lake or bay) that are used to irrigate five or more acres of commercial food or forage crops, or watering of commercial livestock, or ingredient in commercial food preparation, or supply for aquaculture, or supply for a major or designated water recreation area, excluding drinking water use.**

This question does not apply since surface water is not used for the above purpose.
(Source: Zanesville Water Division)

16. **Provide any surface water body 15 miles downriver (radius in lakes or bay) used for drinking water.**

Surface water is not used for drinking water purposes. (Source: Zanesville Water Division)

17. **Provide the average human food chain production (pounds per year) for each surface water body 15 miles downriver of 15-mile radius in lake.**

This information is not available. (Source: Zanesville Water Division)

18. **Within a 4-mile radius from the site and 15 miles downriver, or radius in lake, identify all sensitive environments that exists. Provide original documentation (USF&W, Natural Heritage Database, State agencies, NOAA, etc.), multiple sensitive environments within a sensitive environment.**

According to the Ohio Department of Natural Resources, they have two records from within the four-mile radius and several records from the Muskingum River.

To the northeast of the airport and on the Norwich Quad, they have a record for the Hellbender, a type of salamander which is Endangered in Ohio and a candidate for the Federal list (Federal Category 2). It was found in salt Creek at the U.S. Route 40 bridge. To the southwest of the airport and on the Zanesville east Quad is a record for the State Champion Big White Oak Tree. It is located on County Route 192 for which they do not

have an exact address. The tree measures 21 feet and 6 inches in circumference, 78 feet tall and has an 84 foot crown spread.

There are several fish and mollusk records from the Muskingum River, as well as one turtle record. The fifteen mile stretch is from the I-70 bridge in Zanesville downstream to the Muskingum-Morgan county line. This stretch is located on the Zanesville West, Zanesville East and Philo Quads.

On the Zanesville West Quad, the Eastern Sand Darter was collected at four sites. Four other species of fish were also collected, two of which are State Endangered. The Sand Darter was collected again near the mouth of Brush Creek. This location is on Zanesville East Quad.

There are five collection points on the Philo Quad where several species of fish and mollusks were taken. Also, a smooth softshell turtle was reported from collection site #2 below the dam at Duncan Falls. (Source: Ohio Department of Natural Resources)

- 19. What is the linear frontage of all wetlands 15 miles downriver or 15-mile radius in lake?**

The linear frontage for all wetlands 5 miles downriver is approximately 7.76 miles. (Source: National Wetlands Inventory Map, Department of the Interior)

- 20. Provide the location and number of persons residing, working, attending school, or day care within 200 feet. This includes both the Air and Army Guard.**

The Zanesville ANGSC has a weekday work population of 17 people; during training weekends, the population rises to 180. (Source: PA/SI Reports)

- 21. Identify all terrestrial sensitive environments that exist on-site. Provide original documentation (USF&W, natural Heritage Database, State Agencies, NOAA, etc.) and locate each on a 7.5 minute topographic map. Note that there could be multiple sensitive environments within a sensitive environment.**

According to the Ohio Department of Natural Resources, no records of rare plants or animals at the airport site exist at the present time. A lack of records for any particular

area is not a statement that rare species or unique features are absent from the area.
(Source: Ohio Department of Natural Resources)

22. For each source, choose one description from Table 8 that describes the accessibility to a human population. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.

The best description for this site is: surrounded by maintained fence.

23. Provide the total number of people in following distance rings from source(s)?

- 0-1/4 mile: No observation
- 1/4-1/2 mile: 387
- 1/2-1 mile: 451
- 1-2 miles: 1891
- 2-3 miles: 4109
- 3-4 miles: 6638

Use 1990 Census data and/or actual house counts. Document how calculated.

Source: Census of Population and Housing, 1990: Public Law (P.L.) 94-171 Data (Ohio) (Machine- Readable Data File)/ Prepared by the Bureau of the Census.--
Washington: The Bureau (Production and Distribution), 1991.

Prepared By: Ohio Data Users Center, Ohio Dept. of Development, P.O. Box 1001, Columbus, OH. 43266-0101. Telephone 800/848-1300, Extension 2115, or 614/466-2115. (DL--11/93)

24. For each source, choose one description from Table 9 that describes the gaseous containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]), as to why the source meets that description and not any other in the Table. From Table 10, choose the appropriate description of each source type. For each source, choose one description from Table 11 that describes that particulate containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets the description and not any other in the Table.

Table 9: All situations except those specifically listed below.

Table 10: Contaminated soil (excluding land treatment).

Table 11: All situations except those specifically listed below.

- 25. Provide the location and area (in acres) of all wetlands within 4 miles of the site.**

There are approximately 194 acres of wetlands within a 4-mile radius of the site.
(Source: National Wetlands Inventory Map, Department of the Interior)

- 26. Contact EPA Regional Office immediately if any radionuclides are present or suspected at the site and supply all radiological information known to date.**

No radionuclides are present or suspected at the site.

- 27. For all of the above information, use primary data source and supply two copies or specify where copies may be obtained.**

- 28. Provide any removals or remedial actions taken place at the site.**

No removals or remedial actions have taken place at the site.

- 29. If information relevant to a question already has been provided to the EPA, your answer may precisely cite the previous submittal by title, date, page, and paragraph number rather than resubmitting the information.**

DEFINITIONS

Detection Limit (DL)

Lowest amount that can be distinguished from the normal random "noise" of an analytical instrument or method. For this submission, the detection limit used is the method detection limit (MDL), or, for real-time instruments, the detection limit of the instrument as used in the field.

Hazardous Substance

CERCLA hazardous substances, pollutants, and contaminant as defined in CERCLA sections 101(14) and 101(33).

Method Detection Limit (MDL)

Lowest concentration of an analyte that a method can detect reliably in either a sample or blank.

Sample Quantitation Limit (SQL)

Quantity of a substance that can reasonably be quantified given the methods of analysis and sample characteristics that may affect quantification (for example, dilution, concentration).

Site: Area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources and may include areas between sources.

Source: Any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance. Sources do not include those volumes of air, groundwater, surface water, or surface water sediments that have become contaminated by migration, except: in the case of either a groundwater plume with no identified source, or contaminated surface water sediments with no identified source, the plume may be considered a source.

Table 1

All Sources (Except Surface Impoundments, Land Treatment, Containers, and Tanks)

Evidence of hazardous substance migration from source area (i.e., source area includes source and any associated containment structures).

No liner.

No evidence of hazardous substance migration from source area, a liner, and:

- (a) None of the following present: (1) maintained engineered cover, (2) functioning and maintained run-on control system and runoff management system, or (3) functioning leachate collection and removal system immediately above liner.
- (b) Any one of the three items in (a) present.
- (c) Any two of the items in (a) present.
- (d) All three items in (a) present plus a functioning groundwater monitoring system.
- (e) All items in (d) present plus no bulk or non-containerized liquids nor materials containing free liquids deposited in source area.

No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, functioning groundwater monitoring system, and:

- (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or nonmaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.
- (g) None of the deficiencies in (f) present.

Source area inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate is generated, liquid or materials containing free liquids not deposited in source area, and functioning and maintained run-on control present.

Surface Impoundment

Evidence of hazardous substance migration from surface impoundment.

No liner.

Free liquids present with either no diking, unsound diking, or diking that is not regularly inspected and maintained.

No evidence of hazardous substance migration from surface impoundment, free liquids present, sound diking that is regularly inspected and maintained, adequate freeboard, and:

- (a) Liner.
- (b) Liner with functioning leachate collection and removal system below liner, and functioning groundwater monitoring system.
- (c) Double liner with functioning leachate collection and removal system between liners, and functioning groundwater monitoring system.

No evidence of hazardous substance migration from surface impoundment and all free liquids eliminated at closure (either by removal of liquids or solidification of remaining wastes and waste residues).

Land Treatment

Evidence of hazardous substance migration from land treatment zone.

No functioning, maintained, run-on control and runoff management system.

No evidence of hazardous substance migration from land treatment zone and:

- (a) Functioning and maintained run-on control and runoff management system.
- (b) Functioning and maintained run-on control and runoff management system, and vegetative cover established over entire land treatment area.
- (c) Land treatment area maintained in compliance with 40 CFR 264.280.

Containers

All containers buried.

Evidence of hazardous substance migration from container area (i.e., container area includes containers and any associated containment structures).

No liner (or no essentially impervious base) under container area.

No diking (or no similar structure) surrounding container area.

Diking surrounding container area unsound or not regularly inspected and maintained.

No evidence of hazardous substance migration from container area, container area surrounded by sound diking that is regularly inspected and maintained, and:

- (a) Liner (or essentially impervious base) under container area.
- (b) Essentially impervious base under container area with liquids collection and removal system.
- (c) Containment system includes essentially impervious base, liquids collection system, sufficient contain 10 percent of volume of all containers, and functioning and maintained run-on control; plus functioning groundwater monitoring system, and spilled or leaked hazardous substances and accumulated precipitation removed in timely manner to prevent overflow of collection system, at least weekly inspection of containers, hazardous substances in leaking or deteriorating containers transferred to containers in good condition, and containers sealed except when waste is added or removed.
- (d) Free liquids present containment system has sufficient capacity to hold total volume of all containers and to provide adequate freeboard, single liner under container area with functioning leachate collection and removal system below liner, and functioning groundwater monitoring system.
- (e) Same as (d) except: double liner under container area with functioning leachate collection and removal system between liners.

Containers inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate would be generated from any unsealed or ruptured containers, liquids or materials containing free liquids not deposited in any container, and functioning and maintained runoff control present.

No evidence of hazardous substance migration from container area, containers leaking, and all free liquids eliminated at closure (either by removal of liquid or solidification of remaining wastes and waste residues).

Tank

Belowground tank.

Evidence of hazardous substance migration from tank area (i.e., tank area includes tank, ancillary equipment such as piping, and any associated containment structures).

Tank and ancillary equipment not provided with secondary containment, (e.g., liner under tank area, vault system, double wall).

No diking (or no similar structure) surrounding tank and ancillary equipment

Diking surrounding tank and ancillary equipment unsound or not regularly inspected and maintained.

No evidence of hazardous substance migration from tank area, tank and ancillary equipment surrounded by sound diking that is regularly inspected and maintained, and:

- (a) Tank and ancillary equipment provided with secondary containment.
- (b) Tank and ancillary equipment provided with secondary containment with leak detection and collection system.
- (c) Tank and ancillary equipment provided with secondary containment system that detects and collects spilled or leaked hazardous substances and accumulated precipitation and has sufficient capacity to contain 110 percent of volume of largest tank within containment area, spilled or leaked hazardous substances and accumulated precipitation removed in timely manner, at least weekly inspection of tank and secondary containment system, all leaking or unfit-for-use tank systems promptly responded to, and functioning groundwater monitoring system.
- (d) Containment system has sufficient capacity to hold volume of all tanks within tank containment area and to provide adequate freeboard, single liner under that containment area with functioning

leachate collection and removal system below liner, and functioning groundwater monitoring system.

- (e) Same as (d) except double liner under tank containment area with functioning leachate collection and removal system between liners.

Tank is aboveground, and inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate would be generated from any material released from tank, liquids or materials containing free liquids not deposited in any tank, and functioning and maintained run-on control present.

Table 2

All Sources (Except Surface Impoundments, Land Treatment, Containers, and Tanks)

Evidence of hazardous substance migration from source area (i.e., source area includes source and any associated containment structures).

No evidence of hazardous substance migration from source areas and:

- (a) Neither of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system.
- (b) Any one of the two items in (a) present.
- (c) Any two of the following present: (1) maintained engineered cover, or (2) functioning and maintained run-on control system and runoff management system, or (3) liner with functioning leachate collection and removal system immediately above liner.
- (d) All items in (c) present.
- (e) All items in (c) present, plus no bulk or non-containerized liquids nor materials containing free liquids deposited in source area.

No evidence of hazardous substance migration from source area, double liner with functioning leachate collection and removal system above and between liners, and:

- (f) Only one of the following deficiencies present in containment: (1) bulk or noncontainerized liquids or materials containing free liquids deposited in source area, or (2) no or nonfunctioning or nonmaintained run-on control system and runoff management system, or (3) no or nonmaintained engineered cover.
- (g) None of the deficiencies in (f) present.

Source area inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate is generated, liquids or materials containing free liquids not deposited in source area, and functioning and maintained run-on control present.

Surface Impoundment

Evidence of hazardous substance migration from surface impoundment.

Free liquids present with either no diking, unsound diking, or diking that is not regularly inspected and maintained.

No evidence of hazardous substance migration from surface impoundment, free liquids present, sound diking that is regularly inspected and maintained, adequate freeboard, and:

- (a) No liner.
- (b) Liner.
- (c) Liner with functioning leachate collection and removal system below liner.
- (d) Double liner with functioning leachate collection and removal system between liners.

No evidence of hazardous substance migration from surface impoundment and all free liquids eliminated at closure (either by removal of liquids or solidification of remaining wastes and waste residues).

Land Treatment

Evidence of hazardous substance migration from land treatment zone.

No functioning and maintained run-on control and runoff management system.

No evidence of hazardous substance migration from land treatment zone and:

- (a) Functioning and maintained and maintained run-on control and runoff management system.
- (b) Functioning and maintained run-on control and runoff management system, and vegetative cover established over entire land treatment area.
- (c) Land treatment area maintained in compliance with 40 CFR 264.280.

Containers

All containers buried.

Evidence of hazardous substance migration from container area (i.e., container area includes containers and any associated containment structures).

No diking (or no similar structure) surrounding container area.

Diking surrounding container area unsound or not regularly inspected and maintained.

No evidence of hazardous substance migration from container area and container area surrounded by sound diking that is regularly inspected and maintained.

No evidence of hazardous substance migration from container area, container area surrounded by sound diking that is regularly inspected and maintained, and:

- (a) Essentially impervious base under container area with liquids collection and removal system.
- (b) Containment system includes essentially impervious base, liquids collection system, sufficient capacity to contain 10 percent of volume of all containers, and functioning and maintained run-on control; and spilled or leaked hazardous substances and accumulated precipitation removed in timely manner to prevent overflow of collection system, at least weekly inspection of containers, hazardous substances in leaking or deteriorating containers transferred to containers in good condition, and containers sealed except when waste is added or removed.
- (c) Free liquids present containment system has sufficient capacity to hold total volume of all containers and to provide adequate freeboard, and single liner under container area with functioning leachate collection and removal system below liner.
- (d) Same as (c) except: double liner under container area with functioning leachate collection and removal system between liners. Containers inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate would be generated from any unsealed or ruptured containers, liquids or materials containing free liquids not deposited in any container, and functioning and maintained run-on control present.

No evidence of hazardous substance migration from container area, containers leaking, and all free liquids eliminated at closure (either by removal of liquids or solidification of remaining wastes and waste residues).

Tank

Belowground tank.

Evidence of hazardous substance migration from tank area (i.e., tank area includes tank, ancillary equipment such as piping, and any associated containment structures).

No diking (or no similar structure) surrounding tank and ancillary equipment.

Diking surrounding tank and ancillary equipment unsound or not regularly inspected and maintained.

No evidence of hazardous substance migration from tank area and tank and ancillary equipment surrounded by sound diking that is regularly inspected and maintained.

No evidence of hazardous substance migration from tank area, tank and ancillary equipment surrounded by sound diking that is regularly inspected and maintained, and:

- (a) Tank and ancillary equipment provided with secondary containment (e.g., liner under tank area, vault system, double wall) with leak detection and collection system.
- (b) Tank and ancillary equipment provided with secondary containment system that detects and collects spiked or leaked hazardous substances and accumulated precipitation and has sufficient capacity to contain 110 percent of volume of largest tank within containment area, spilled or leaked hazardous substances and accumulated precipitation removed in a timely manner, at least weekly inspection of tank and secondary containment system, and all leaking or unfit-for-use tank systems promptly responded to.

- (c) Containment system has sufficient capacity to hold total volume of all tanks within the tank containment area and to provide adequate freeboard, and single liner under tank containment area with functioning leachate collection and removal system below liner.
- (d) Same as (c) except double liner under tank containment area with functioning leachate collection and removal system between liners.

Tank is aboveground, and inside or under maintained intact structure that provides protection from precipitation so that neither runoff nor leachate would be generated from any material released from tank, liquids or materials containing free liquids not deposited in any tank, and functioning and maintained run-on control present.

Table 3
Surface Soil Description

Coarse-textured soils with high infiltration rates (for example, sands, loamy sands).
 Medium-textured soils with moderate infiltration rates (for example, sandy loams, loams).
 Moderately fine-textured soils with low infiltration rates (for example, silty loams, silts, sandy clay loams).
 Fine-textured soils with very low infiltration rates (for example, clays, sandy clays, silty clay loams, clay loams, silty clays); or impermeable surfaces (for example, pavement).

Table 4
Floodplain Categories

Source floods annually.
 Source in 10-year floodplain.
 Source in 100-year floodplain.
 Source in 500-year floodplain.
 None of the above.

Table 5
Flood Containment

Documentation that containment at the source is designed, constructed, operated, and maintained to prevent a washout of hazardous substances by the flood being evaluated (see floodplain category).

Table 6
Sensitive Environments

Critical habitat^a for Federal designated endangered or threatened species.
 Marine Sanctuary.
 National Park.
 Designated Federal Wilderness Area.
 Areas identified under Coastal Zone Management Act^b.
 Sensitive areas identified under National Estuary Program^c or Near Coastal Waters Program^d.
 Critical areas identified under the Clean Lakes Program^e.
 National Monument^f.
 National Seashore Recreational Area.
 National Lakeshore Recreational Area.
 Habitat known to be used by Federal designated or proposed endangered or threatened species.
 National Preserve.
 National or State Wildlife Refuge.
 Unit of Coastal Barrier Resources System.
 Coastal Barrier (undeveloped).

Federal land designated for protection of natural ecosystems.
 Administratively Proposed Federal Wilderness Area.
 Spawning areas critical^e for the maintenance of fish/shellfish species within river, lake, or coastal tidal waters.
 Migratory pathways and feeding areas critical for maintenance of anadromous fish species within river reaches or areas in lakes or coastal tidal waters in which the fish spend extended periods of time.
 Terrestrial areas utilized for breeding by large or dense aggregations of animals^h.
 National river reach designated as Recreational.
 Habitat known to be used by State designated endangered or threatened species.
 Habitat known to be used by species under review as to its Federal endangered or threatened status.
 Coastal Barrier (partially developed).
 Federal designated Scenic or Wild River.
 State land designated for wildlife or game management.
 State designated Scenic or Wild River.
 State designated Natural Areas.
 Particular areas, relatively small in size, important to maintenance of unique biotic communities.
 State designated areas for protection or maintenance of aquatic lifeⁱ.

^aCritical habitat as defined in 50 CFR 424.02.

^bAreas identified in State Coastal Zone Management plans as requiring protection because of ecological value.

^cNational Estuary Program study areas (Subareas within subareas) identified in Comprehensive Conservation and Management Plans as requiring protection because they support critical life stages of key estuarine species (Section 320 of Clean Water Act, as amended).

^dNear Coastal Waters as defined in Sections 104(b)(3), 304(1), 319, and 320 of Clean Water Act, as amended.

^eClean Lakes Program critical areas (subareas within lakes, or in some cases entire small lakes) identified by State Clean Lake Plans as critical habitats (Section 314 of Clean Water Act, as amended).

^fUse only for air migration pathway.

^gLimit to areas described as being used for intense or concentrated spawning by a given species.

^hFor the air migration pathway, limit to terrestrial vertebrate species. For the surface water migration pathway, limit to terrestrial vertebrate species aquatic or semiaquatic foraging habits.

ⁱAreas designated under Section 305(a) of Clean Water Act, as amended.

Table 7
 Terrestrial Sensitive Environments

Terrestrial critical habitat^a for Federal designated endangered or threatened species.
 National Park.
 Designated Federal Wilderness Area.
 National Monument.
 Terrestrial habitat known to be used by Federal designated or proposed threatened or endangered species.
 National Preserve (terrestrial).
 National or State Terrestrial Wildlife Refuge.
 Federal land designated for protection of natural ecosystems.
 Administratively proposed Federal Wilderness Area.
 Terrestrial areas utilized for breeding by large or dense aggregations of animals^b.
 Terrestrial habitat known to be used by State designated endangered or threatened species.
 Terrestrial habitat known to be used by species under review as to its Federal designated endangered or threatened status.
 State lands designated for wildlife or game management.
 State designated Natural Areas.
 Particular area, relatively small in size, important to maintenance of unique biotic communities.

^aCritical habitat as defined in 50 CFR 42.

^bLimit to vertebrate species.

Table 8
Area of Observed Contamination

Designated recreational area.
 Regularly used for public recreation (for example, fishing, hiking, softball).
 Accessible and unique recreational area (for example, vacant lots in urban area).
 Moderately accessible (may have some access improvements – for example, gravel road), with some public recreation use.
 Slightly accessible (for example, extremely rural area with no road improvement), with some public recreation use.
 Accessible, with no public recreation use.
 Surrounded by maintained fence or combination of maintained fence and natural barriers.
 Physically inaccessible to public, with no evidence of public recreation use.

Table 9
Gas Containment Description

All situations except those specifically listed below.
 Evidence of biogas release.
 Active fire within source.
 Gas collection/treatment system functioning, regularly inspected, maintained, and completely covering source.
 Source substantially surrounded by engineering windbreak and no other containment specifically described in this table applies.
 Source covered with essentially impermeable, regularly inspected, maintained cover.
 Uncontaminated soil cover >3 feet:
 Source substantially vegetated with little exposed soil.
 Source lightly vegetated with much exposed soil.
 Source substantially devoid of vegetation.
 Uncontaminated soil cover ≥ 1 foot and ≤ 3 feet:
 Source heavily vegetated with essentially no exposed soil.
 Cover soil resistant to gas migration^a.
 Cover soil type not resistant to gas migration^a or unknown.
 Source substantially vegetated with little exposed soil and cover soil type resistant to gas migration^a.
 Other.
 Uncontaminated soil cover <1 foot:
 Source heavily vegetated with essentially no exposed soil and cover soil type resistant to gas migration^a.
 Other.
 Totally or partially enclosed within structurally intact building and no other containment specifically described in this table applies.
 Source consists solely of intact, sealed containers:
 Totally protected from weather by regularly inspected, maintained cover.
 Other.

^aConsider moist fine-grained and saturated coarse-grained soils resistant to gas migration; consider all other soils nonresistant.

Table 10
Source Type

Active fire area.
 Burn pit.
 Containers or tanks (buried/belowground):
 Evidence of biogas release.
 No evidence of biogas release.
 Containers or tanks, not elsewhere specified.

Contaminated soil (excluding land treatment).

Landfarm/land treatment.

Landfill:

Evidence of biogas release.

No evidence of biogas release.

Pile:

Tailings pile.

Scrap metal or junk pile.

Trash pile.

Chemical waste pile.

Other waste piles.

Surface impoundments (buried/backfilled):

Evidence of biogas release.

No evidence of biogas release.

Surface impoundment (not buried/backfilled):

Dry.

Other.

Other types of sources, not elsewhere specified.

Table 11
Particulate Containment Description

All situations except those specifically listed below.

Source contains only particulate hazardous substances totally covered by liquids.

Source substantially surrounded by engineered windbreak and no other containment specifically described in this table applies.

Source covered with essentially impermeable, regularly inspected, maintained cover.

Uncontaminated soil cover >3 feet:

Source substantially vegetated with little or no exposed soil.

Source lightly vegetated with much exposed soil.

Source substantially devoid of vegetation.

Uncontaminated soil cover ≥ 1 foot and ≤ 3 feet:

Source heavily vegetated with essentially no exposed soil:

Cover soil type resistant to gas migration^a.

Cover soil type not resistant to gas migration^a.

Source substantially vegetated with little exposed soil and cover soil type resistant to gas migration^a.

Other.

Uncontaminated soil cover <1 foot:

Source heavily vegetated with essentially no exposed soil and cover soil type resistant to gas migration^a.

Other.

Totally or partially enclosed within structurally intact building and no other containment specifically described in this table applies.

Source consists solely of containers:

All containers contain only liquids.

All containers intact, sealed, and totally protected from weather by regularly inspected, maintained cover.

All containers intact and sealed.

Other.

^aConsider moist fine-grained and saturated coarse-grained soils resistant to gas migration; consider all other soils nonresistant.

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF NATURAL AREAS AND PRESERVES

September 7, 1993

Zanesville Air National Guard Base

FOUR-MILE RADIUS

NORWICH QUAD

- A. Cryptobranchus alleganiensis - Hellbender (salamander), State Endangered, Federal Category 2

ZANESVILLE EAST QUAD

- B. White Oak Champion Big Tree

MUSKINGUM RIVER

ZANESVILLE WEST QUAD

1. Ammocrypta pellucida - Eastern Sand Darter, Special Interest, Federal Category 2, (4 sites)
2. Notropis buchanani - Ghost Shiner
Noturus eleutherus - Mountain Madtom, State Endangered
Noturus stigmosus - Northern Madtom, State Endangered
Percina phoxocephala - Slenderhead Darter, Special Interest

ZANESVILLE EAST QUAD

1. Ammocrypta pellucida - Eastern Sand Darter, Special Interest, Federal Category 2

PHILO QUAD

1. Notropis buchanani - Ghost Shiner
Noturus eleutherus - Mountain Madtom, State Endangered
Noturus stigmosus - Northern Madtom, State Endangered
Percina phoxocephala - Slenderhead Darter, Special Interest
Ammocrypta pellucida - Eastern Sand Darter, Special Interest, Federal Category 2
2. Apalone mutica - Smooth Softshell (turtle)
Truncilla donaciformis - Fawnsfoot (mollusk), Threatened
Potamilus ohioensis - Pink Papershell (mollusk)
3. Truncilla donaciformis - Fawnsfoot (mollusk), Threatened
4. Percina phoxocephala - Slenderhead Darter, Special Interest
Potamilus ohioensis - Pink Papershell (mollusk)
Obliquaria reflexa - Threehorn Wartyback (mollusk), Threatened
Truncilla donaciformis - Fawnsfoot (mollusk), Threatened
5. Obliquaria reflexa - Threehorn Wartyback (mollusk), Threatened
Percina phoxocephala - Slenderhead Darter, Special Interest
Ammocrypta pellucida - Eastern Sand Darter, Special Interest, Federal Category 2

ORIGINAL

Nº 371374

OR TYPEWRITER

DO NOT USE INK.

Division of Water
1562 W. First Avenue
Columbus, Ohio 43212

County Muskingum Township Salt Creek Section of Township _____

Owner Bohdan Bednarczuk Address Rt. 1, Chandlerville, Ohio

Location of property On Cuskingum County Road # 5 5680 Clay Pike

CONSTRUCTION DETAILS

Casing diameter 7" Length of casing 65'

Type of screen.....Length of screen.....

Type of pump-----

Capacity of pump.....

Depth of pump setting.....

Date of completion Nov. 20, 1967

BAILING OR PUMPING TEST

Pumping Rate.....20.....G.P.M. Duration of test.....hrs.

Drawdown 63 ft. Date

Static level-depth to water.....25.....ft.

Quality (clear, cloudy, taste, odor) Clear

Pump installed by.....

WELL LOG*

[illegible]

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.

N.

W.

E.

S.

See reverse side for instructions

Drilling Firm Suburban Drilling Co.

Date Nov. 21, 1967

Address 1950 E. Pike, Zanesville, Ohio

Signed B. H. White

*If additional space is needed to complete well log, use next consecutive numbered form.

WELL LOG AND DRILLING REPORT

ORIGINAL

State of Ohio

PLEASE USE PENCIL
OR TYPEWRITER
DO NOT USE INK.

DEPARTMENT OF NATURAL RESOURCES

Division of Water
1562 W. First Avenue
Columbus 12, Ohio

No 299456

County MUSKINGUM Township SALT CREEK Section of Township 4

Owner John I. Roll Address RT #1 Chandlessville Ohio

Location of property 5905 Clay Pk. (County Rd. 5) 1/2 mi E. of Junction of 5 & Town 389

CONSTRUCTION DETAILS

Casing diameter 8" I.D. Length of casing 26'
Type of screen WIRE Length of screen _____
Type of pump (JET) DEEP WELL
Capacity of pump 220 G.P.H.
Depth of pump setting 125 ft.
Date of completion 3-23-64

BAILING OR PUMPING TEST

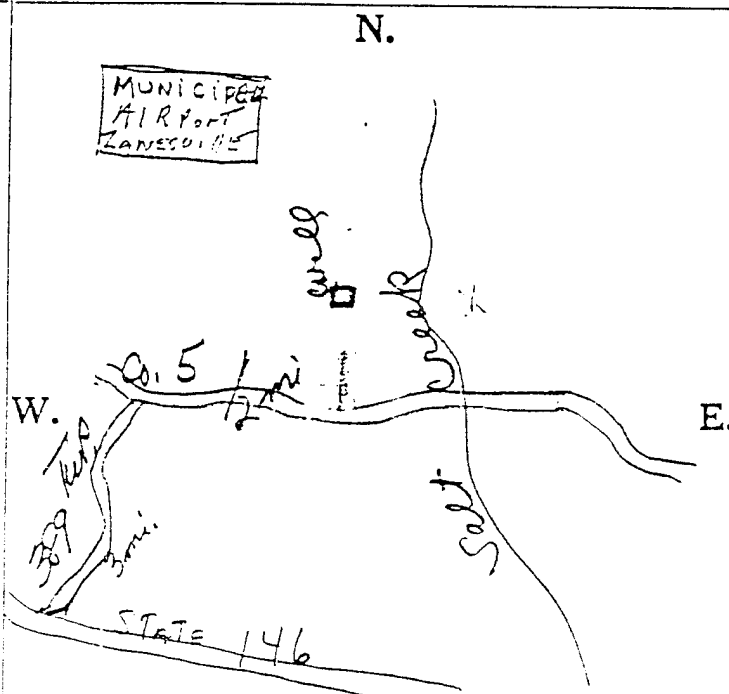
Pumping Rate 1.5 G.P.M. Duration of test 12 hrs.
Drawdown ALL THE WAY Date 3-21-64
Static level-depth to water 35 ft.
Quality (clear, cloudy, taste, odor) CLEAR, NO
ODOR
Pump installed by RUSS MYERS

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Clay (yellow)	0 Feet	6 Ft.
Clay + SHALE (yellow)	6	8
Clay + SHALE (gray)	8	16
CLAY (BLACK)	16	21
CLAY + SHALE (BLACK)	21	28
SANDROCK COARSE (gray)	28	41
SANDROCK FINE (gray)	41	55
CLAY (LIGHT GRAY)	55	56
CLAY Gray + yellow	56	62
LIME STONE SHALE	62	64
CLAY LIGHT GRAY	64	66
CLAY, SHALE + SAND	66	80
CLAY + SHALE	80	88
SHALE (gray)	88	91
CLAY, SHALE AND SAND	91	102
WHITE SAND ROCK	102	115
SHALE (DARK GRAY)	115	127

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



S.

See reverse side for instructions

Drilling Firm RUSS MYERS

Date 3-23-64

Address 2 EASTWOOD DRIVE LANESVILLE

Signed Russell E. Myers

OHIO

WELL LOG AND DRILLING REPORT

ORIGINAL

NO CARBON PAPER
NECESSARY -
SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Geological Survey
Fountain Square
Columbus, Ohio 43224 Phone (614) 466-5344

496070

COUNTY MUSKINGUM TOWNSHIP WAYNE SECTION OF TOWNSHIP OR LOT NUMBER 6
OWNER GARY TYSINGER ADDRESS 312 NORTH ST DUNCAN FALLS, OH
LOCATION OF PROPERTY ON SOUTH SIDE OF CLAY PIKE APPROX 1/2 MI EAST MILLER'S LANE

CONSTRUCTION DETAILS

Casing diameter 2" 3/8" DIAPHR Length of casing 100
Type of screen 1/2" HOLE Length of screen 65 FT
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion _____

BAILING OR PUMPING TEST

(Specify one by circling)

Test rate 36 GPH Duration of test 2" hrs
Drawdown 80' ft Date _____
Static level (depth to water) 20 ft
Quality (clear, cloudy, taste, odor) Clear
no odor
Pump installed by _____

WELL LOG*

Formations: sandstone, shale, limestone, gravel, clay	From	To
<u>FILLY LOAM</u>	<u>0 ft</u>	<u>3 ft</u>
<u>SHALE</u>	<u>3</u>	<u>32</u>
<u>SANDY SHALE</u>	<u>32</u>	<u>45</u>
<u>GRAV CLAY</u>	<u>45</u>	<u>51</u>
<u>SHALE</u>	<u>51</u>	<u>71</u>
<u>DARK SHALE</u>	<u>71</u>	<u>78</u>
<u>SAND ROCK</u>	<u>78</u>	<u>83</u>
<u>SANDY SHALE</u>	<u>83</u>	<u>100'</u>

W

WATER 34' + 78'

SKETCH SHOWING LOCATION

Locate in reference to numbered state highways, street intersections, county roads, etc.

N

Clay PIKE

MILLERS LANE

FULLERS GOLF

E

S

DRILLING FIRM R.C. Ramsey
ADDRESS 2945 Chandlersville Rd.
Zanesville, Ohio 43701

DATE 4-16-76
SIGNED R.C. Ramsey

*If additional space is needed to complete well log, use next consecutive numbered form.

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WELL LOG AND DRILLING REPORT

ORIGINAL

NO CARBON PAPER
NECESSARY—
SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
65 S. Front St., Rm. 815 Phone (614) 469-2646
Columbus, Ohio 43215

No. 414434

County MUSKINGUM Township PERRY Section of Township _____

Owner EDDIE ALLARD Address RT. 4 ZANESVILLE OHIO

Location of property 1/2 mi SOUTH OF US 40 ON ST RT 797

CONSTRUCTION DETAILS

Casing diameter 7" Length of casing 23'
Type of screen NONE Length of screen _____
Type of pump SUBM.
Capacity of pump 10 GPM
Depth of pump setting 68'
Date of completion 3-29-71

BAILING OR PUMPING TEST (Specify one by circling)

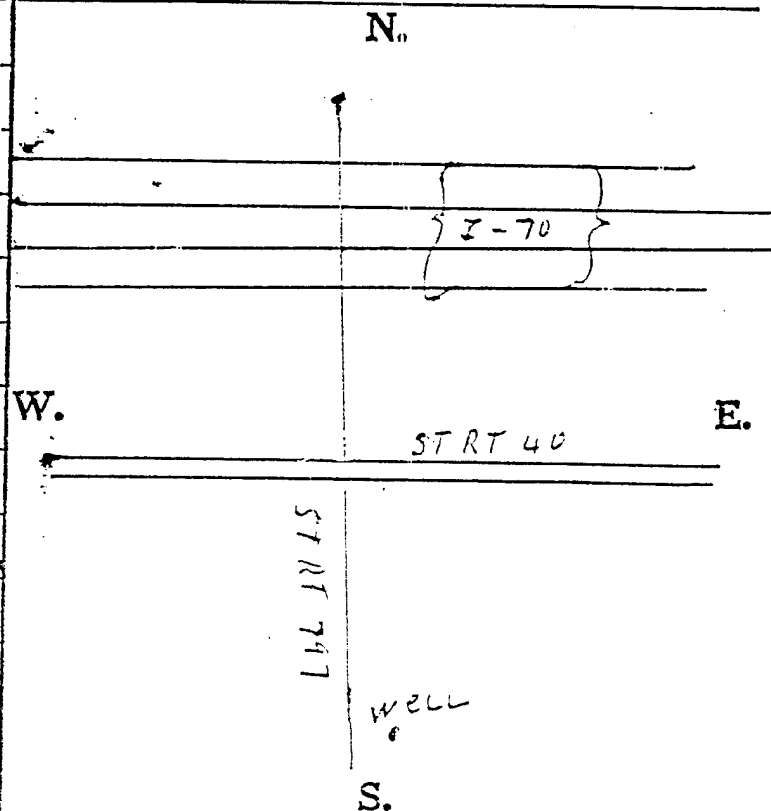
Test Rate 15 G.P.M. Duration of test 1 hrs.
Drawdown 78 ft. Date 3-29-71
Static level-depth to water 24 ft.
Quality (clear, cloudy, taste, odor) CLEAR
Pump installed by JERRY & BILL P.

WELL LOG*

Formations Sandstone, shale, limestone, gravel and clay	From	To
<u>CLAY</u>	<u>0 Feet</u>	<u>12 Ft.</u>
<u>SAND</u>	<u>12</u>	<u>15</u>
<u>SAND ROCK</u>	<u>15</u>	<u>40</u>
<u>GRAY SHALE</u>	<u>40</u>	<u>43</u>
<u>GRAY SANDY SHALE</u>	<u>43</u>	<u>44</u>
<u>BLACK SHALE</u>	<u>44</u>	<u>47</u>
<u>GRAY SHALE</u>	<u>47</u>	<u>65</u>
<u>SOFT GRAY SHALE</u>	<u>65</u>	<u>70</u>
<u>GRAY SANDY SHALE</u>	<u>70</u>	<u>78 TD</u>
<u>WATER AT 29' & 40'</u>		

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



Drilling Firm SUBURBAN DRILLING CO.

Date 3-31-71

Address 1950 EAST PIKE ZANESVILLE OHIO

Signed Bill P. White

*If additional space is needed to complete well log, use next consecutive numbered form.

WELL LOG AND DRILLING REPORT

ORIGINAL

PLEASE USE PENCIL
OR TYPEWRITER

State of Ohio
DEPARTMENT OF NATURAL RESOURCES

Nº 360638

DO NOT USE INK.

Division of Water
1562 W. First Avenue
Columbus, Ohio 43212

County Madison Township Berry Section of Township

Owner Robert Ford Address E. Pike, Zanesville, O.

Location of property Airport Road, Zanesville, O.

CONSTRUCTION DETAILS

Casing diameter 6 3/8 Length of casing 131 7/8
Type of screen Length of screen
Type of pump SUB.
Capacity of pump 10 G.P.M.
Depth of pump setting 135
Date of completion 8/24/67

BAILING OR PUMPING TEST

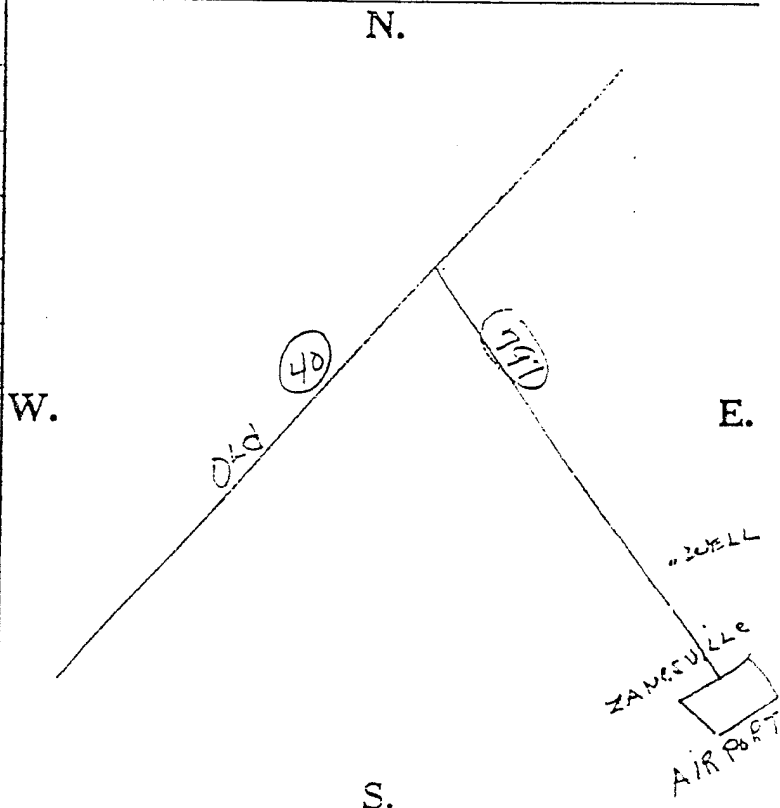
Pumping Rate 2 G.P.M. Duration of test hrs.
Drawdown 140 ft. Date
Static level-depth to water 50 ft.
Quality (clear, cloudy, taste, odor) clear
Pump installed by Swingle

WELL LOG*

Formations Sandstone, shale, limestone, gravel and clay	From	To
Surface	0 Feet	5 Ft.
Sandstone	5	70
Coal	70	71
Shale	71	83
Sandstone	83	105
Shale	105	135
Coal	135	139
Shale	139	140
Water 104 ft.		

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm Swingle Water Well Drilling

Date 8/24/67

Address Rt. 7, Zanesville, Ohio

Signed Joseph L. Swingle Jr.

*If additional space is needed to complete well log, use next consecutive numbered form.

WELL LOG AND DRILLING REPORT

ORIGINAL

PLEASE USE PENCIL
OR TYPEWRITER

DO NOT USE INK.

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus, Ohio 43212

No 360629

County Franklin Township Rowan Section of Township

Owner Robert L. Smith Address 625 Locust, Zanesville, O.

Location of property 1/2 mile east of Zanesville Airport on Rte. road 366

CONSTRUCTION DETAILS

Casing diameter 6 7/8" Length of casing 32
Type of screen Length of screen
Type of pump SUB
Capacity of pump 10 G.P.M.
Depth of pump setting 160
Date of completion 9/15/67

BAILING OR PUMPING TEST

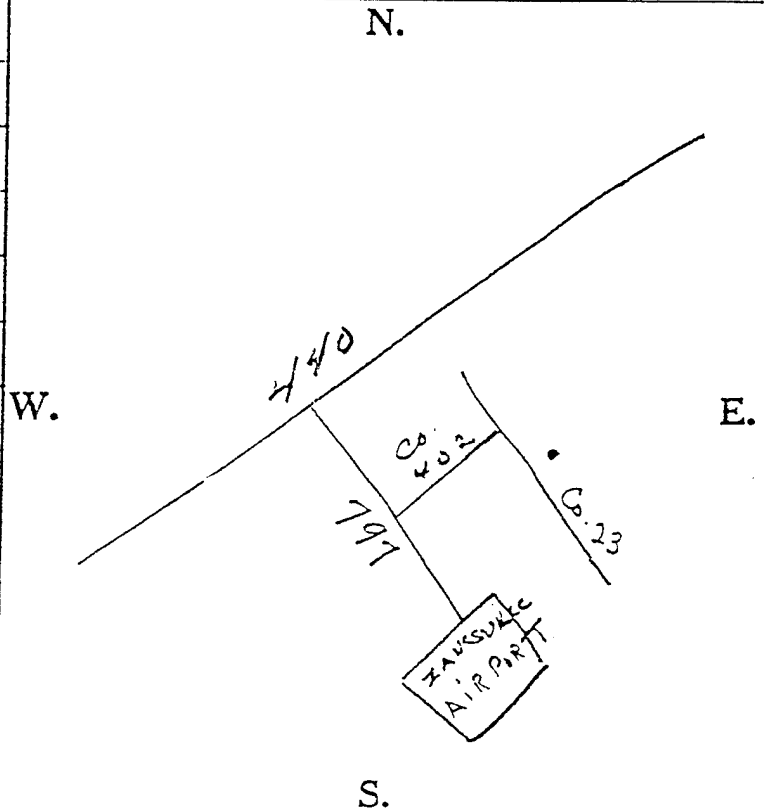
Pumping Rate 3 G.P.M. Duration of test hrs.
Drawdown ft. Date
Static level-depth to water 80 ft.
Quality (clear, cloudy, taste, odor) clear
no odor
Pump installed by Swingle

WELL LOG*

Formations Sandstone, shale, limestone, gravel and clay	From	To
Surface	0 Feet	3 Ft.
Clay & Shale	3	15
Sandstone	15	45
Slate--blue	45	75
Sandstone	75	108
Lime	108	130
Sandstone	130	140
Slate --blue	140	145
Water 108 ft.		

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm Swingle Water Well Drilling Date 9/15/67

Address Rt. 3, Zanesville, Ohio Signed Joseph L. Swingle

*If additional space is needed to complete well log, use next consecutive numbered form.

(65)

WELL LOG AND DRILLING REPORT

NO CARBON PAPER
NECESSARY-
SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

592569

COUNTY Muskingum TOWNSHIP Perry SECTION OF TOWNSHIP _____
OWNER Ron Lafferty ADDRESS 6100 Park Lane
LOCATION OF PROPERTY 6100 Park Lane Norwich

CONSTRUCTION DETAILS

BAILING OR PUMPING TEST

(specify one by circling)

Casing diameter 6.500 Length of casing 23
Type of screen perforated casing Length of screen 100
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion _____

Test rate 1 gpm Duration of test _____ hrs
Drawdown 134 ft Date Oct 16 81
Static level (depth to water) 57 ft
Quality (clear, cloudy, taste, odor) Clear
Pump installed by _____

WELL LOG*

SKETCH SHOWING LOCATION

Formations: sandstone, shale,
limestone, gravel, clay

From

To

Locate in reference to numbered
state highways, street intersections, county roads, etc.

Brown Shale	0 ft	14 ft
Brown Sand Rock	14	39
White Sand Rock	34	51
Gray Shale	51	61
Coal	61	63
White Sand Rock	63	97
Gray Shale	97	101
Coal	101	103
White Sand Rock	103	119
Gray Soft Shale	119	134
Water at	73	
Total Depth	134	

W

N

East
old Wharfing
Road

S Pry Rd

Park Lane

E

Well

Zanesville

Hiram

S

DRILLING FIRM Anderson Drilling
ADDRESS 113 S Willow Dr

DATE Oct 16 1981

SIGNED Robert Anderson

*If additional space is needed to complete well log, use next consecutive numbered form.

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66

WELL LOG AND DRILLING REPORT

ORIGINAL

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NECESSARY—
SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

520870

COUNTY Muskingum TOWNSHIP Perry SECTION OF TOWNSHIP 3 or 23
OWNER Tom & Kathy Richey ADDRESS Southern Rd Norwich, Ohio
LOCATION OF PROPERTY on north side of Park Lane app 1/2 mi west of S. Ry. Rd

CONSTRUCTION DETAILS

Casing diameter 7" Plastic Length of casing 25
Type of screen _____ Length of screen _____
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion _____

BAILING OR PUMPING TEST

(specify one by circling)

Test rate 15 gpm Duration of test _____ hrs
Drawdown 32 ft Date _____
Static level (depth to water) 18 ft
Quality (clear, cloudy, taste, odor) clear
Pump installed by _____

WELL LOG*

Formations: sandstone, shale,
limestone, gravel, clay

From

To

0 ft

2 ft

Loam & Fill

2

8

Broken sandstone

8

34

Sandstone

shale

34

50

water @ 40'

SKETCH SHOWING LOCATION

Locate in reference to numbered
state highways, street intersections, county roads, etc.

W

E

S

DRILLING FIRM R.C. Ramsey
ADDRESS 2945 Chandlersville Rd.
Lanesville, Ohio 43701

DATE 9-17-78

SIGNED RC Ramsey

*If additional space is needed to complete well log, use next consecutive numbered form.

67

ORIGINAL

490001

COLUMBUS, OHIO 43227 Phone (614) 466-6671

COUNTY Frank TOWNSHIP Cary SECTION OF TOWNSHIP OR LOT NUMBER Hicks Rd

OWNER Bob Kussman ADDRESS 445 Hicks Rd

LOCATION OF PROPERTY 442 Hicks Rd

DRILLING FIRM

ADDRESS

DATE _____

SIGNED

*If additional space is needed to complete well log, use next consecutive numbered form.

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WELL LOG AND DRILLING REPORT

ORIGINAL

PLEASE USE PENCIL
OR TYPEWRITER.
DO NOT USE INK.

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus, Ohio

No. 253161

County Musk. Township Peery Section of Township U.S. Military Land
Owner Tom Kussmaul Address Rt. #4 So. Sonora Road Zanesville
Location of property 1 mile south of rt. 40 on county road 52

CONSTRUCTION DETAILS

Casing diameter 5½" Length of casing 64'
Type of screen ¼" slots Length of screen 1' each
Type of pump
Capacity of pump
Depth of pump setting
Date of completion

BAILING OR PUMPING TEST

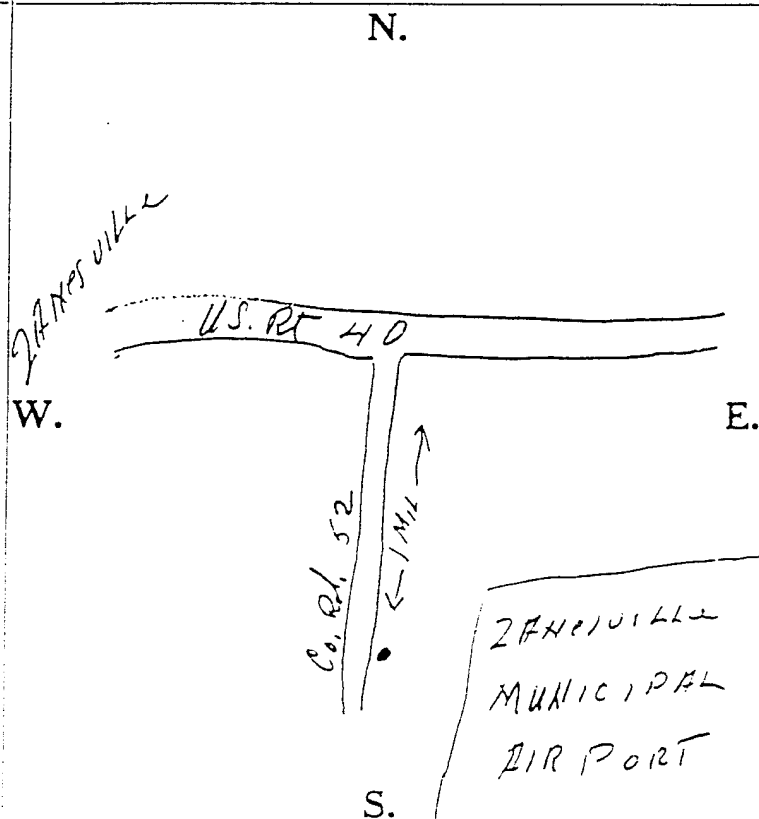
Pumping rate 1½ G.P.M. Duration of test 5 hrs.
Drawdown 122' ft. Date 8/13/60
Developed capacity 1½ G.P.M.
Static level—depth to water 32' ft.
Pump installed by

WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top	0 Feet	2 Ft.
Clay	2	8
Sandy clay	8	12
Yellow sand rock	12	25
White sand rock	25	36
Gray shale	36	40
Coal	40	41
clay	41	46
Soft gray shale	46	58
Sand rock	58	59
Light sandy shale	59	62
Sand rock	62	78
Gray sandy shale	78	121
Gray sand rock	121	122
WATER AT 50'		
Well Gravel packed		
1' of perforations		
1' from bottom and		
10' from bottom		

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm SUBURBAN DRILLING CO.
118 PLEASANT GROVE ROAD
Address ZANESVILLE, OHIO

Date 9/10/60
Signed B. N. White

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WELL LOG AND DRILLING REPORT

NO CARBON PAPER
NECESSARY -
SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

592917

COUNTY Muskegon TOWNSHIP PERCY SECTION OF TOWNSHIP Wheeling Rd.
OWNER Dee L. B. B. B. ADDRESS 270 Byron St.
LOCATION OF PROPERTY Wheeling Rd.

CONSTRUCTION DETAILS

Casing diameter 6 3/4" Length of casing 48'
Type of screen slotted Length of screen 140'
Type of pump Sub.
Capacity of pump 10 G.P.M.
Depth of pump setting 185'
Date of completion Aug 1981

BAILING OR PUMPING TEST

(specify one by circling)

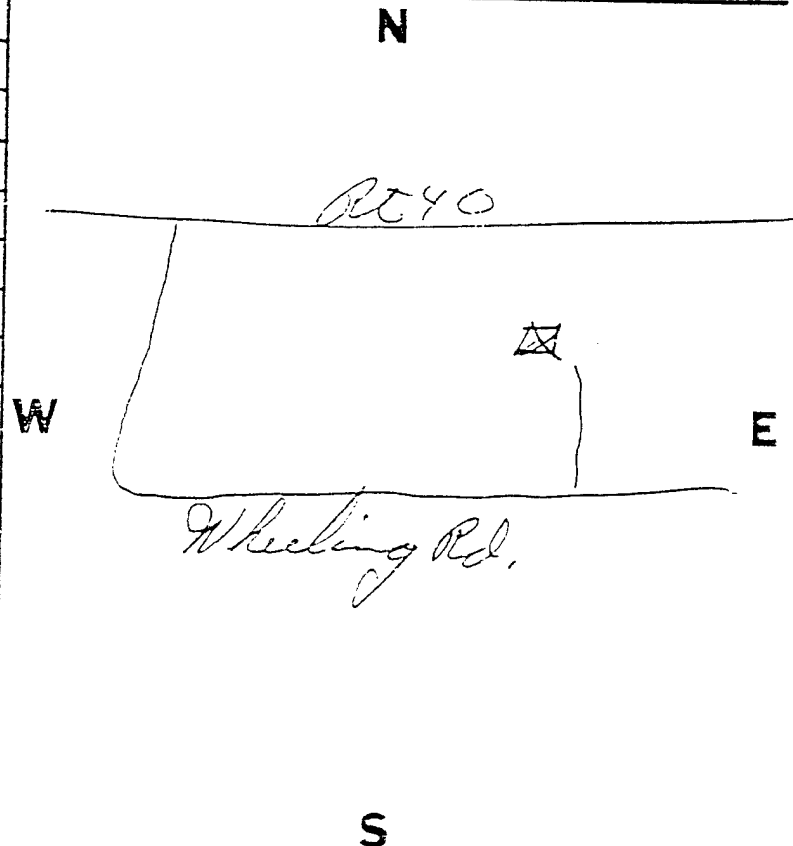
Test rate 1.83 gpm. Duration of test 2 hrs
Drawdown 143 ft. Date Aug 81
Static level (depth to water) 57' ft
Quality (clear) cloudy, taste, odor
Pump installed by Robert Walling

WELL LOG*

Formations: sandstone, shale, limestone, gravel, clay	From	To
<u>Drain shale</u>	0 ft	17 ft
<u>1" clay</u>	17	40
<u>Sandstone</u>	40	45
<u>Limestone</u>	45	60
<u>shale</u>	60	100
<u>Sandstone</u>	100	120
<u>shale</u>	120	180
<u>sandstone</u>	180	300
<u>Water - 55'</u>		
<u>" 90'</u>		

SKETCH SHOWING LOCATION

Locate in reference to numbered state highways, street intersections, county roads, etc.



DRILLING FIRM B. B. B.
ADDRESS 50 Butler, Phila

DATE Aug 1981
SIGNED [Signature]

*If additional space is needed to complete well log, use next consecutive numbered form.

ORIGINAL COPY - ODNR, DIVISION OF WATER, FOUNTAIN SQ., COLS., OHIO 43224

60

TYPE OR USE PEN
SELF-TRANSCRIBING
PRESS HARD!

Permit Number _____

COUNTY Michigan TOWNSHIP Perry SECTION OF TOWNSHIP 1
OWNER Charles Cook PROPERTY ADDRESS 563 Richmond
LOCATION OF PROPERTY South West side of Old Highway 181, over the white sand dunes

CONSTRUCTION DETAILS

BAILING OR PUMPING TEST

(specify one by circling)

ASING

casing Diameter 10 3/4" OD in. Length of Casing 27 1/2' ft.
 Material: ☐ Steel ☐ Galv. ☒ PVC ☐ Other _____
 Joints: ☐ Threaded ☐ Welded ☒ Solvent ☐ Other _____

CREEN

Type (wire wrapped, louvered, etc.) PVC SDRP 76 Material 76
 Length 10 ft Diameter 76 in
 Set between 20 ft and 90 ft Slot .500

ROUT

Material Bentonite Volume used 410 lbs
Method of installation WOA Method
Depth: placed from 15 ft. to Surface ft.
Rotary ☒ Cable ☐ Augered ☐ Driven ☐ Dug ☐ Other _____

WELL TEST

Test rate 3/4 gpm Duration of test 1 hrs.
Drawdown (water level during pumping) 55 ft.
Measured from: ☐ top of casing ☒ ground level ☐ Other _____
Static Level (depth to water) 25 ft. Date: 7-9-70
Quality (clear, cloudy, taste, odor) clear, low odor

PUMP

Type of pump sub Capacity 10 gpm
Pump set at 70' ft
Pump installed by William B. Haines

Pitless Device ☒ Adapter ☐ Preassembled unit

Use of Well drinking no

WELL LOG*

Show color, texture, hardness, and formation:
sandstone, shale, limestone, gravel, clay, sand

From	To
------	----

To

Loom	0 ft	4 ft
Soft Brown clay	4	10
Barren sandstone	10	27
Bray shale	27	75
Foot of loam	75	76
Soft brown shale	76	90

10.4 m at 27

SKETCH SHOWING LOCATION

Show distances well lies from numbered
state highways, street intersections, county roads, etc.

Hand-drawn map of a site with cardinal directions N, S, E, W. A large irregular shape is labeled "old wheel in Rd" with an arrow pointing to a small square. A line is labeled "wall". A diagonal line is labeled "the old Rd.". A horizontal line at the bottom is labeled "Clay P. H.". The letters "S", "N", "E", "W" are placed around the perimeter.

If additional space is needed to complete well log, use next consecutively numbered form.

DNR 7802.88

ILLING FIRM Remedy Drilling SIGNED W. Glenn B. Kim
 ADDRESS 2405 Chandlerville Rd. DATE 4-17-90
 CITY, STATE, ZIP Zanesville Ohio 43701 ODH REGISTRATION NUMBER 190

Completion of this form is required by 1521.05, Ohio Revised Code - file within 30 days after completion of drilling.

ORIGINAL COPY - ODNR, DIVISION OF WATER, 1939 FOUNTAIN SQ. DRIVE, COLS., OHIO 43224

Blue - Customer's Copy Pink - Driller's Copy Green - Local Health Dept. Copy

WELL LOG AND DRILLING REPORT

ORIGINAL

PLEASE USE PENCIL
OR TYPEWRITER
DO NOT USE INK.

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus 12, Ohio

No 323546

County Muskingum Township Washington Section of Township

Owner Darrell Davis Address Old Wheeling Rd., Zanesville, O.

Location of property Old Wheeling Road

CONSTRUCTION DETAILS

24' of 8" Casing 45' of 7" Liner

Type of screen Length of screen

Type of pump

Capacity of pump 1/3 H.P. Jacuzzi

Depth of pump setting

Date of completion March 16, 1965

BAILING OR PUMPING TEST

Pumping Rate 2 G.P.M. Duration of test hrs.

Drawdown 180 ft. Date

Static level-depth to water 25 ft.

Quality (clear, cloudy, taste, odor) Clear

Pump installed by Suburban Drilling Co.

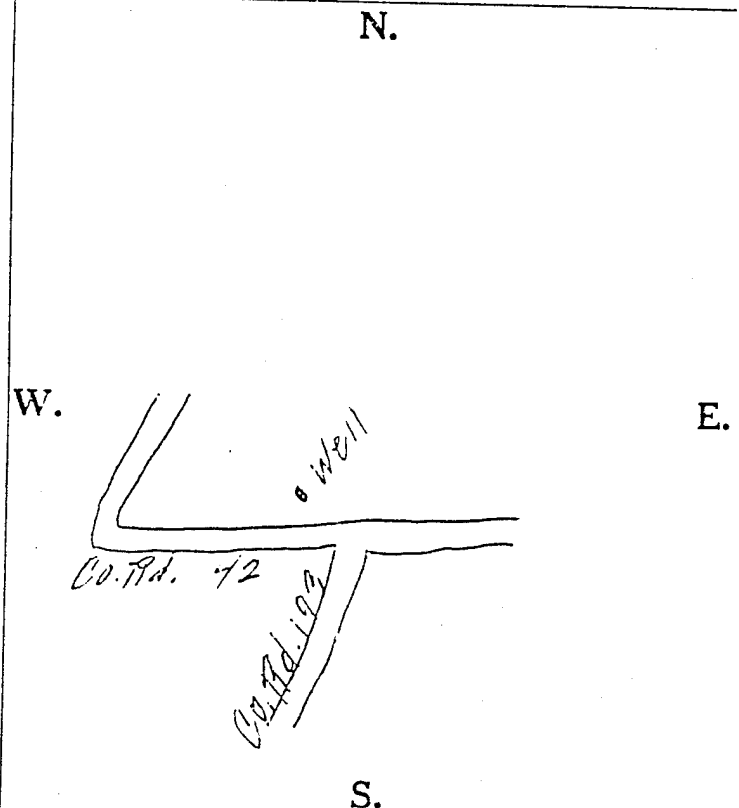
WELL LOG

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top	0 Feet	5 Ft.
Brown Clay	5	24
Brown Sandy Shale	24	35
Sand Rock	35	41
Gray Shale	41	45
Red Shale	45	49
Gray Shale	49	54
Sand Rock	54	59
Gray Sandy Shale	59	81
Coal	81	83
Clay	83	86
Gray Sandy Shale	86	88
Sand Rock	88	92
Gray Sandy Shale	92	127
Black Slate	127	128
Gray Sandy Shale	128	132
Lime	132	133
Gray Sandy Shale	133	141
Sand Rock	141	147
Gray Sandy Shale	147	180

(Water at 30')

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.



See reverse side for instructions

Drilling Firm Suburban Drilling Co.

Date May 21, 1965

Address 1950 East Pike, Zanesville, O.

Signed B. H. White

242

WELL LOG AND DRILLING REPORT

NO CARBON PAPER
NECESSARY -
SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

592916

COUNTY Frank TOWNSHIP Frank SECTION OF TOWNSHIP Whiting Rd.
OWNER Franklin P. Smith ADDRESS Whiting Rd. 7
LOCATION OF PROPERTY Whiting Rd.

CONSTRUCTION DETAILS

Casing diameter 6 3/4 Length of casing 21'
Type of screen slot Length of screen 160'
Type of pump Submersible
Capacity of pump 10.5 GPM
Depth of pump setting 16.5'
Date of completion Aug 1981

BAILING OR PUMPING TEST

(specify one by circling)

Test rate 2 gpm Duration of test 4 hrs
Drawdown 15.6 ft Date Aug 81
Static level (depth to water) 24' ft
Quality (clear, cloudy, taste, odor) clear
Pump installed by Bob D. Smith

WELL LOG*

Formations: sandstone, shale,
limestone, gravel, clay

From

To

Clay	0 ft	12 ft
Limestone	12	32
Shale (sp)	32	45
gray shale	45	55
Dark shale	55	60
shale	60	80
limestone	80	105
shale	105	180

W

E

Water 80'

SKETCH SHOWING LOCATION

Locate in reference to numbered
state highways, street intersections, county roads, etc.

N

Rt. 40

Whiting Rd.

S

DRILLING FIRM Wohr

DATE Aug 1981

ADDRESS 500 Butler Plaza

SIGNED John F. Smith

*If additional space is needed to complete well log, use next consecutive numbered form.

ORIGINAL COPY - ODNR, DIVISION OF WATER, FOUNTAIN SQ., COLS., OHIO 43224

243

WELL LOG AND DRILLING REPORT

ORIGINAL

NO CARBON PAPER
NECESSARY-
SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

503191

COUNTY Franklin TOWNSHIP Franklin SECTION OF TOWNSHIP 4
OWNER Franklin ADDRESS Franklin
LOCATION OF PROPERTY Franklin Rd.

CONSTRUCTION DETAILS

Casing diameter 6 3/4" Length of casing 32'
Type of screen slots Length of screen 8'
Type of pump Sub
Capacity of pump 10 HP
Depth of pump setting 90'
Date of completion July 1974

BAILING OR PUMPING TEST

(specify one by circling)

Test rate 10 gpm Duration of test 1 hrs
Drawdown 78 ft Date July 1974
Static level (depth to water) 220' ft
Quality (clear, cloudy, taste, odor) clear
Pump installed by Franklin

WELL LOG*

SKETCH SHOWING LOCATION

Formations: sandstone, shale,
limestone, gravel, clay

From

To

Locate in reference to numbered
state highways, street intersections, county roads, etc.

<u>Loam + shale</u>	0 ft	15 ft
<u>gray clay</u>	15	25
<u>shale</u>	25	29
<u>sandy shale</u>	29	40
<u>sandstone</u>	40	55
<u>shale</u>	55	59
<u>sandstone</u>	59	70
<u>soft shale</u>	70	97
<u>sandstone</u>	97	100

W

N

E

Franklin Rd

Clay Pipe

S

DRILLING FIRM Franklin

DATE July 1974

ADDRESS Franklin Rd

SIGNED Franklin

*If additional space is needed to complete well log, use next consecutive numbered form.

244

WELL LOG AND DRILLING REPORT

ORIGINAL

NO CARBON PAPER
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State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

503180

COUNTY Franklin TOWNSHIP West SECTION OF TOWNSHIP 4
OWNER B. T. L. Schilling ADDRESS James Ohio
LOCATION OF PROPERTY Falkner Rd.

CONSTRUCTION DETAILS

Casing diameter 1.875 Length of casing 25'
Type of screen slt Length of screen 12.2'
Type of pump -
Capacity of pump -
Depth of pump setting -
Date of completion -

BAILING OR PUMPING TEST

(specify one by circling)

Test rate 2' gpm Duration of test 1 hrs
Drawdown 1.30 ft Date May 1979
Static level (depth to water) 20' ft
Quality (clear) cloudy, taste, odor)
Pump installed by -

WELL LOG*

Formations: sandstone, shale,
limestone, gravel, clay

From

To

<u>tan shale</u>	0 ft	35 ft
<u>limestone</u>	35	38
<u>gray shale</u>	38	40
<u>tan limestone</u>	40	60
<u>shale</u>	60	90
<u>limestone</u>	90	105
<u>gray shale</u>	105	130

Water at 57' - 200 gpm

SKETCH SHOWING LOCATION

Locate in reference to numbered
state highways, street intersections, county roads, etc.

W

N

E

S

DRILLING FIRM Bach

ADDRESS 500 B. T. L. Schilling Rd.

DATE May 1979

SIGNED J. L. Schilling

*If additional space is needed to complete well log, use next consecutive numbered form.

245

WELL LOG AND DRILLING REPORT

ORIGINAL

NO CARBON PAPER
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State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Geological Survey
Fountain Square
Columbus, Ohio 43224 Phone (614) 466-5344

497954

COUNTY Wayne TOWNSHIP Wayne SECTION OF TOWNSHIP lot 8
OR LOT NUMBER
OWNER W. Leonard H. Hayes ADDRESS 465 Standrust Circle
LOCATION OF PROPERTY Corner of Fulkerson Rd & Clear Lake Drive

CONSTRUCTION DETAILS

Casing diameter 7" Length of casing 38 ft
Type of screen none Length of screen none
Type of pump 5 HP M Sub
Capacity of pump 5 gpm
Depth of pump setting 176
Date of completion 5/19/78

BAILING OR PUMPING TEST

(Specify one by circling)

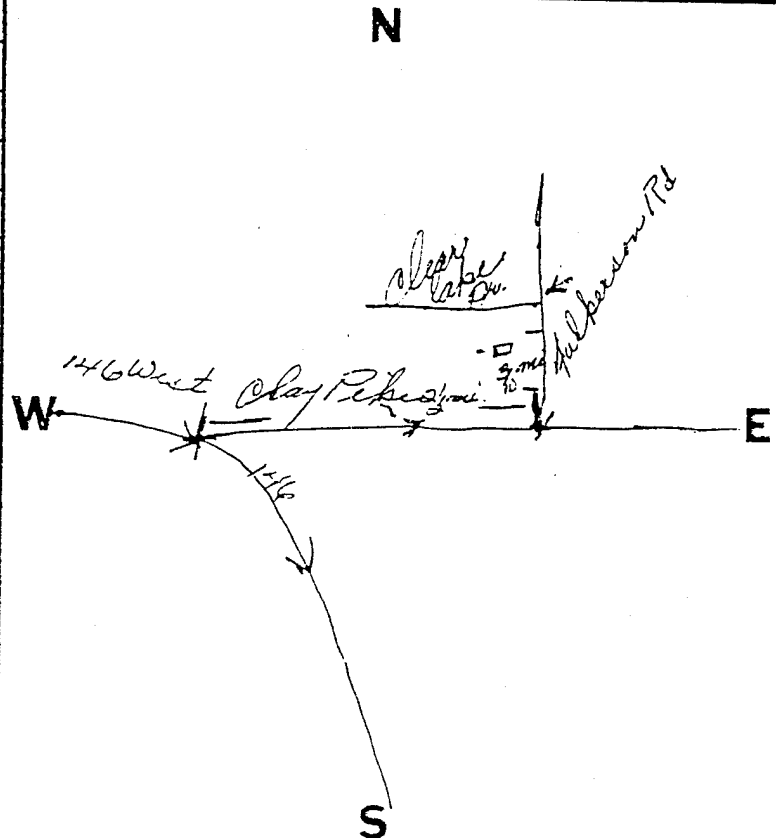
Test rate 4 gpm Duration of test 16 HRS hrs
Drawdown 90 ft Date 5/18 - 5/19/78
Static level (depth to water) 30 ft ft
Quality (clear, cloudy, taste, odor) no odor or taste
Pump installed by Gary Anderson

WELL LOG*

Formations: sandstone, shale, limestone, gravel, clay	From	To
<u>Top Soil</u>	<u>0 ft</u>	<u>4 ft</u>
<u>Brown Clay</u>	<u>4</u>	<u>15</u>
<u>Gray Clay</u>	<u>15</u>	<u>27</u>
<u>Red Clay</u>	<u>27</u>	<u>39</u>
<u>Orange line Stone</u>	<u>39</u>	<u>43</u>
<u>Gray line Rock</u>	<u>43</u>	<u>47</u>
<u>Gray Shale water</u>	<u>47</u>	<u>51</u>
<u>Gray Clay</u>	<u>51</u>	<u>54</u>
<u>Sand Stone</u>	<u>57</u>	<u>57</u>
<u>Gray Clay</u>	<u>57</u>	<u>68</u>
<u>Gray Shale</u>	<u>68</u>	<u>69</u>
<u>Blue Shale</u>	<u>69</u>	<u>75</u>
<u>Gray Shale</u>	<u>75</u>	<u>111</u>
<u>Gray Clay</u>	<u>111</u>	<u>113.4</u>

SKETCH SHOWING LOCATION

Locate in reference to numbered state highways, street intersections, county roads, etc.



DRILLING FIRM Gary Anderson
ADDRESS 900 Virginia Ridge Rd

DATE 5/24/78
SIGNED Gary Anderson Sr.

*If additional space is needed to complete well log, use next consecutive numbered form.

WELL LOG AND DRILLING REPORT

ORIGINAL

NO CARBON PAPER
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State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
65 S. Front St., Rm. 815 Phone (614) 469-2646
Columbus, Ohio 43215

No. 404089

County Muskingum Township Wayne Section of Township _____

Owner O. E. Blackford #3 Address Rt. 4 Zanesville, Ohio

Location of property 4 Miles Off St. Rt. 40 on Co. Rd. 5

CONSTRUCTION DETAILS

Casing diameter 7" Length of casing 43'
Type of screen _____ Length of screen _____
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion 4-17-70

BAILING OR PUMPING TEST
(Specify one by circling)

Test Rate 3 G.P.M. Duration of test _____ hrs.
Drawdown 41 ft. Date _____
Static level-depth to water 13 ft.
Quality (clear, cloudy, taste, odor) _____
Pump installed by _____

WELL LOG*

Formations Sandstone, shale, limestone, gravel and clay	From	To
Top	0 Feet	2 Ft.
Clay	2	17
Gray Shale	17	21
Dark Shale	21	30
Gray Shale	30	40
Sand Rock	40	41 TD

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.

N.

#1 Plugged @ 167'
#2 Plugged @ 63'

W.

CO. RD 5

E.

WELL

S.

CO. RD 193

Drilling Firm Suburban Drilling Co., Inc. Date 4-20-70

Address 1950 East Pike
Zanesville, Ohio Signed Bill N. White

*If additional space is needed to complete well log, use next consecutive numbered form. 35

ORIGINAL.

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
65 S. Front St., Rm. 815 Phone (614) 469-2646
Columbus, Ohio 43215

448216

CONSTRUCTION DETAILS

BAILING OR PUMPING TEST
(Specify one by circling)

WELL LOG*

SKETCH SHOWING LOCATION

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.

N.

W.

E.

5.

Date 4/8/73

Signed A. J. H. H. H.

*If additional space is needed to complete well log, use next consecutive numbered form.

WELL LOG AND DRILLING REPORT

NO CARBON PAPER
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SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

601962

COUNTY Muskingum TOWNSHIP Wayne SECTION OF TOWNSHIP _____
OWNER Louis Vinbelden ADDRESS 3885 Clay Pike
LOCATION OF PROPERTY Clay Pike

CONSTRUCTION DETAILS

Casing diameter 7" Length of casing 18'
Type of screen Perforated Length of screen 76'
Type of pump Submersible
Capacity of pump 12
Depth of pump setting 55 ft
Date of completion Aug 14-1981

BAILING OR PUMPING TEST

(Specify one by circling)

Test rate .5 gpm Duration of test _____ hrs
Drawdown _____ ft Date _____
Static level (depth to water) 18 ft ft
Quality (clear, cloudy, taste, odor) Clear
Pump installed by Swingle Water Well

WELL LOG*

Formations: sandstone, shale,
limestone, gravel, clay

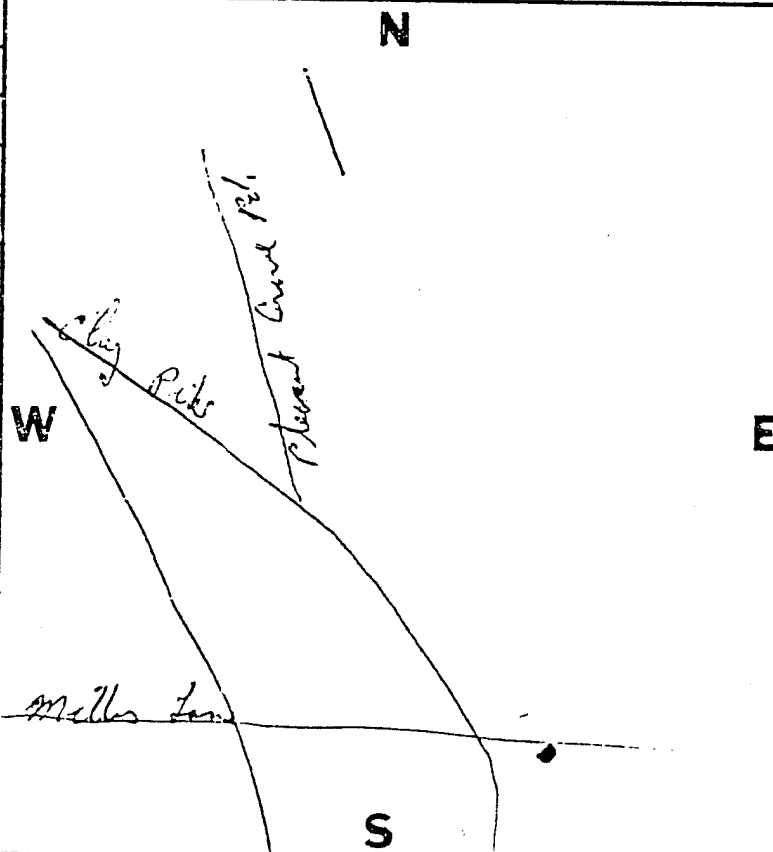
From

To

surface	0 ft	3 ft
brown shale	3	20
shale	20	35
sandstone	35	37
shale	57	58

SKETCH SHOWING LOCATION

Locate in reference to numbered
state highways, street intersections, county roads, etc.



Donald G. Swingle

DRILLING FIRMS Swingle Water Well Drilling

ADDRESS 3480 Moxahala Pk. Rd.

Zanesville, Ohio 43701

DATE Aug 16 - 1981

SIGNED Donald Swingle

*If additional space is needed to complete well log, use next consecutive numbered form.

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WELL LOG AND DRILLING REPORT

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State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

609170

COUNTY Madison TOWNSHIP Warren SECTION OF TOWNSHIP 6
OWNER Robert Fuller ADDRESS 4370 Clay Pike
LOCATION OF PROPERTY on the south side of clay pike approx 1 mile North of Carwick

CONSTRUCTION DETAILS

Casing diameter 2 Length of casing 36'
Type of screen _____ Length of screen _____
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion _____

BAILING OR PUMPING TEST

(Specify one by circling)

Test rate 1 gpm Duration of test 1 hrs
Drawdown 75 ft Date 10-6-82
Static level (depth to water) 50 ft
Quality (clear, cloudy, taste, odor) clear & odor
Pump installed by _____

WELL LOG*

Formations: sandstone, shale,
limestone, gravel, clay

From

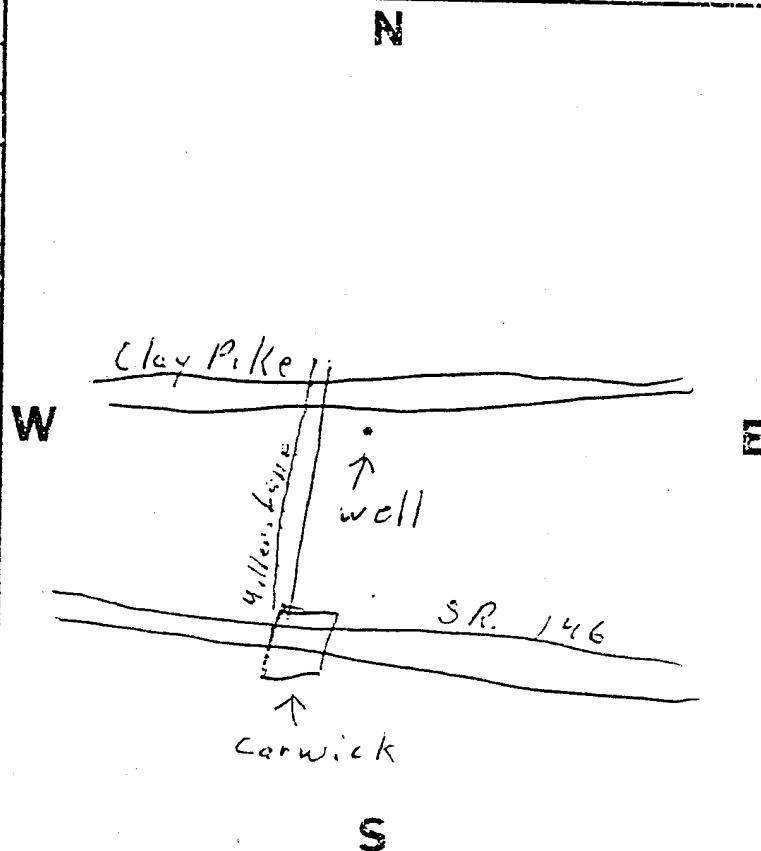
To

Loam	0 ft	11 ft
Gray Clay	11	28
sandy shale	28	31
soft shale	31	35
Sand stone	35	52
sandy shale	52	125

Trace of water at
50' More at 80'

SKETCH SHOWING LOCATION

Locate in reference to numbered
state highways, street intersections, county roads, etc.



DRILLING FIRM Rumsey Drilling
ADDRESS 2945 Chandlerville Rd

DATE 10-6-82
SIGNED William R. Rumsey

*If additional space is needed to complete well log, use next consecutive numbered form.

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(38)

WELL LOG AND DRILLING REPORT

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State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Geological Survey
Fountain Square
Columbus, Ohio 43224 Phone (614) 466-5344

496070

COUNTY MUSKINGHAM TOWNSHIP WAYNE SECTION OF TOWNSHIP OR LOT NUMBER 6
OWNER GARY TYSONER ADDRESS 312 NORTH ST DUNCAN FALLS, C
LOCATION OF PROPERTY ON SOUTH SIDE OF CLAY PIKE 400 YD. EAST MILLERS LANE

CONSTRUCTION DETAILS

BAILING OR PUMPING TEST

(Specify one by circling)

Casing diameter 3" PIPING Length of casing 100
Type of screen 1/2" HOLE Length of screen 65 FT
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion _____
Test rate 36 GPM Duration of test 2 hrs
Drawdown 80' ft Date _____
Static level (depth to water) 23 ft
Quality (clear, cloudy, taste, odor) Clear
no odor
Pump installed by _____

WELL LOG*

SKETCH SHOWING LOCATION

Formations: sandstone, shale,
limestone, gravel, clay

From

To

Locate in reference to numbered
state highways, street intersections, county roads, etc.

<u>FILLY LOAM</u>	0 ft	<u>3</u> ft
<u>SHALE</u>	<u>3</u>	<u>32</u>
<u>SANDY SHALE</u>	<u>32</u>	<u>45</u>
<u>GRAV CLAY</u>	<u>45</u>	<u>51</u>
<u>SHALE</u>	<u>51</u>	<u>71</u>
<u>DARK SHALE</u>	<u>71</u>	<u>78</u>
<u>SAND POC</u>	<u>78</u>	<u>83</u>
<u>SANDY SHALE</u>	<u>83</u>	<u>100'</u>

W

Clay PIKE

MILLERS LANE

FULLERS
GOLF

E

S

DRILLING FIRM R.C. Ramsey
ADDRESS 2945 Chandlersville Rd.
Zanesville, Ohio 43701

DATE 4-16-76
SIGNED R.C. Ramsey

*If additional space is needed to complete well log, use next consecutive numbered form.

39

ORIGINAL

545374

COUNTY MUSKINGUM TOWNSHIP WAYNE SECTION OF TOWNSHIP 6
OWNER ROBERT FULLER ADDRESS MILLERS LANE ZANESVILLE
LOCATION OF PROPERTY ON EAST SIDE OF MILLERS LANE APPROX. SOUTH OF CLAY PIKE

CONSTRUCTION DETAILS			BAILING OR PUMPING TEST <small>(Specify one by circling)</small>	
Casing diameter <u>6 7/8" PLASTIC</u>	Length of casing <u>26' - 6"</u>		Test rate <u>410 GPH</u>	Duration of test _____ hrs
Type of screen _____	Length of screen _____		Drawdown <u>20</u> ft	Date _____
Type of pump <u>SUB</u>			Static level (depth to water) <u>20</u> ft	
Capacity of pump <u>300-400 GPH</u>			Quality (clear, cloudy, taste, odor) <u>Clear</u>	
Depth of pump setting <u>90'</u>			Pump installed by <u>Contractor</u>	
Date of completion _____				
WELL LOG*			SKETCH SHOWING LOCATION	
Formations: sandstone, shale, limestone, gravel, clay	From	To	Locate in reference to numbered state highways, street intersections, county roads, etc.	
<u>Fruit clay</u>	<u>0</u> ft	<u>3</u> ft	<p style="font-size: 2em; margin: 0;">N</p> <p style="margin-top: 10px;">Clay Pike</p> <p style="margin-top: 20px;">Miller Lane</p> <p style="margin-top: 20px;">□</p> <p style="font-size: 2em; margin-top: 20px;">S</p> <p style="position: absolute; left: -50px; top: 50%;">W</p> <p style="position: absolute; right: -50px; top: 50%;">E</p>	
<u>Santa Clara</u>	<u>3</u>	<u>11</u>		
<u>Sandstone &c</u>	<u>11</u>	<u>28</u>		
<u>Show of Coal</u>	<u>28</u>	<u>29</u>		
<u>Sandy shale</u>	<u>29</u>	<u>74</u>		
<u>Brown shale</u>	<u>74</u>	<u>78</u>		
<u>Sandy shale</u>	<u>78</u>	<u>100+</u>		
<u>water app 24-30</u>				
<u>water app 92'</u>				

DRILLING FIRM R.C. Ramsey
2945 Chandler Road
 ADDRESS El Paso, Texas 79905

DATE 11-1-80
SIGNED RC Ramon

ORIGINAL

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
1562 W. First Avenue
Columbus, Ohio 43212

DO NOT USE INK.

Location of property. On Euskingum County Road # 5 5680 Clay Pike

CONSTRUCTION DETAILS	BAILING OR PUMPING TEST
Casing diameter <u>7"</u> Length of casing <u>65'</u>	Pumping Rate <u>20</u> G.P.M. Duration of test <u> </u> hrs.
Type of screen <u> </u> Length of screen <u> </u>	Drawdown <u>63</u> ft. Date <u> </u>
Type of pump <u> </u>	Static level-depth to water <u>25</u> ft.
Capacity of pump <u> </u>	Quality (clear, cloudy, taste, odor) <u>Clear</u>
Depth of pump setting <u> </u>	<u> </u>
Date of completion <u>Nov. 20, 1967</u>	Pump installed by <u> </u>

WELL LOG*

SKETCH SHOWING LOCATION

[illegible]

Locate in reference to numbered
State Highways, St. Intersections, County roads, etc.

N.

W.

E.

5.

See reverse side for instructions

Drilling Firm Suburban Drilling Co.

Date Nov. 21, 1967

Address 1950 E. Pike, Zanesville, Ohio

Signed B. H. White

*If additional space is needed to complete well log, use next consecutive numbered form.

ORIGINAL

Nº 299456

04.0

WELL LOG AND DRILLING REPORT

NO CARBON PAPER
NECESSARY -
SELF-TRANSCRIBING

State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

609200

COUNTY Mustkinguin TOWNSHIP Salt Creek SECTION OF TOWNSHIP 4
OWNER Joseph & Susan Gormley ADDRESS 6535 Clay Pike
LOCATION OF PROPERTY On The North side of Clay Pike approx 6 Mi. east of Jones

CONSTRUCTION DETAILS

Casing diameter 6 5/8" Length of casing 122'
Type of screen 1/4" slots Length of screen 35'
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion _____

BAILING OR PUMPING TEST

(Specify one by circling)

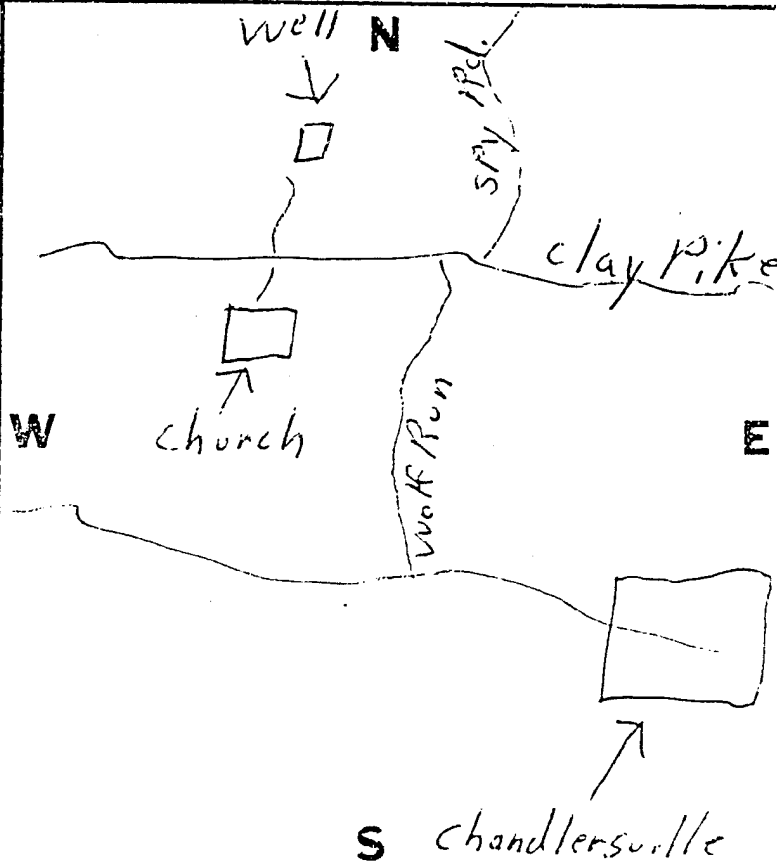
Test rate 5 gpm Duration of test 1 hrs
Drawdown 85 ft Date 9-5-84
Static level (depth to water) 35 ft
Quality (clear, cloudy, taste, odor) clear no odor
Pump installed by _____

WELL LOG*

Formations: sandstone, shale, limestone, gravel, clay	From	To
Loom	0 ft	4 ft
Running Creek sand	4	18
Soft gray shale	18	47
Sandy shale	47	91
Coal streaks	91	95
sandy shale	95	96
soft white clay	96	99
Soft gray shale	99	113
sandy shale	113	124
Sand stone	124	143
sandy shale	143	160
Water AT 47 and 62 Feet		

SKETCH SHOWING LOCATION

Locate in reference to numbered
state highways, street intersections, county roads, etc.



DRILLING FIRM Ramsey Drilling
ADDRESS 2945 Chandlersville Rd

DATE 9-9-84
SIGNED William B. Ramsey

*If additional space is needed to complete well log, use next consecutive numbered form.

ORIGINAL COPY - ODNR, DIVISION OF WATER, FOUNTAIN SQ., COLS., OHIO 43224

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WELL LOG AND DRILLING REPORT

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State of Ohio
DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

592569

COUNTY Muskingum TOWNSHIP Perry SECTION OF TOWNSHIP _____
OWNER Ron Lafferty ADDRESS 6100 Park Lane
LOCATION OF PROPERTY 6100 Park Lane Norwich

CONSTRUCTION DETAILS

Casing diameter 1.5 OD Length of casing 2.3
Type of screen perforated casing Length of screen 100
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion _____

BAILING OR PUMPING TEST

(specify one by circling)

Test rate 1 gpm Duration of test 2 hrs
Drawdown 134' ft Date Oct 16 81
Static level (depth to water) 57 ft
Quality (clear, cloudy, taste, odor) clear
Pump installed by _____

WELL LOG*

Formations: sandstone, shale,
limestone, gravel, clay

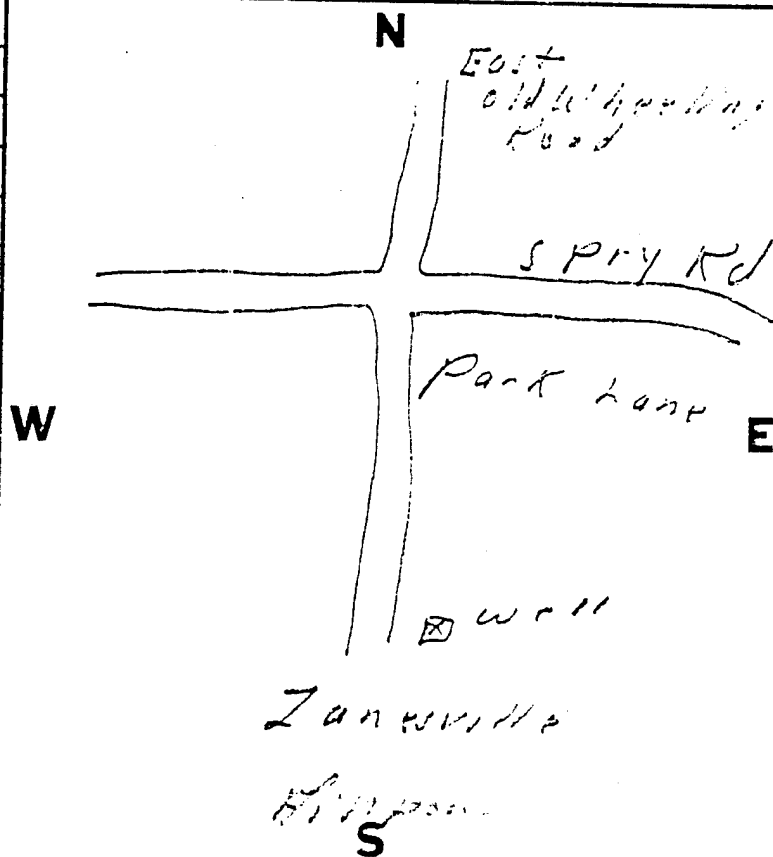
From

To

Brown Shale	0 ft	14 ft
Brown Sand Rock	14	34
White Sand Rock	34	51
Gray Shale	51	61
Pool	61	63
White Sand Rock	63	97
Gray Shale	97	101
Pool	101	103
White Sand Rock	103	119
Gray Soft Shale	119	134
Water at	73	
Total Depth	134	

SKETCH SHOWING LOCATION

Locate in reference to numbered
state highways, street intersections, county roads, etc.



DRILLING FIRM Hoderson Drilling
ADDRESS 112 S. Willow Dr

DATE Oct 16, 1981
SIGNED Robert Anderson

*If additional space is needed to complete well log, use next consecutive numbered form.

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66

ORIGINAL

520870

S

* If additional space is needed to complete well log, use next consecutive numbered form.

WELL LOG AND DRILLING REPORT

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DEPARTMENT OF NATURAL RESOURCES
Division of Water
Fountain Square
Columbus, Ohio 43224

592577

COUNTY Madison TOWNSHIP Spring SECTION OF TOWNSHIP _____
OWNER James E. Anderson ADDRESS 113 So Willow Dr
LOCATION OF PROPERTY 113 So Willow Dr

CONSTRUCTION DETAILS

BAILING OR PUMPING TEST

(specify one by circling)

Casing diameter 4" Length of casing 10'
Type of screen 1/2" mesh Length of screen 10'
Type of pump Submersible
Capacity of pump 10 gpm
Depth of pump setting 10'
Date of completion Feb 1, 1982

Test rate 5 gpm Duration of test 2 hrs
Drawdown 1.5 ft Date Feb 1, 1982
Static level (depth to water) 2.5 ft
Quality (clear, cloudy, taste, odor) Clear
Pump installed by Anderson Drilling

WELL LOG*

SKETCH SHOWING LOCATION

Formations: sandstone, shale,
limestone, gravel, clay

From

To

Locate in reference to numbered
state highways, street intersections, county roads, etc.

<u>Shale</u>	0 ft	10'
<u>Gravel</u>	10'	15'
<u>Sandstone</u>	15'	20'
<u>Shale</u>	20'	25'
<u>Sandstone</u>	25'	29'
<u>Sandstone</u>	29'	34'
<u>Shale</u>	34'	38'
<u>Shale</u>	38'	42'
<u>Sandstone</u>	42'	46'
<u>Shale</u>	46'	50'
<u>Sandstone</u>	50'	54'
<u>Shale</u>	54'	58'
<u>Sandstone</u>	58'	62'
<u>Shale</u>	62'	66'
<u>Sandstone</u>	66'	70'
<u>Shale</u>	70'	74'
<u>Sandstone</u>	74'	78'
<u>Shale</u>	78'	82'
<u>Sandstone</u>	82'	86'
<u>Shale</u>	86'	90'
<u>Sandstone</u>	90'	94'
<u>Shale</u>	94'	98'
<u>Sandstone</u>	98'	102'
<u>Shale</u>	102'	106'
<u>Sandstone</u>	106'	110'
<u>Shale</u>	110'	114'
<u>Sandstone</u>	114'	118'
<u>Shale</u>	118'	122'
<u>Sandstone</u>	122'	126'
<u>Shale</u>	126'	130'
<u>Sandstone</u>	130'	134'
<u>Shale</u>	134'	138'
<u>Sandstone</u>	138'	142'
<u>Shale</u>	142'	146'
<u>Sandstone</u>	146'	150'
<u>Shale</u>	150'	154'
<u>Sandstone</u>	154'	158'
<u>Shale</u>	158'	162'
<u>Sandstone</u>	162'	166'
<u>Shale</u>	166'	170'
<u>Sandstone</u>	170'	174'
<u>Shale</u>	174'	178'
<u>Sandstone</u>	178'	182'
<u>Shale</u>	182'	186'
<u>Sandstone</u>	186'	190'
<u>Shale</u>	190'	194'
<u>Sandstone</u>	194'	198'
<u>Shale</u>	198'	202'
<u>Sandstone</u>	202'	206'
<u>Shale</u>	206'	210'
<u>Sandstone</u>	210'	214'
<u>Shale</u>	214'	218'
<u>Sandstone</u>	218'	222'
<u>Shale</u>	222'	226'
<u>Sandstone</u>	226'	230'
<u>Shale</u>	230'	234'
<u>Sandstone</u>	234'	238'
<u>Shale</u>	238'	242'
<u>Sandstone</u>	242'	246'
<u>Shale</u>	246'	250'
<u>Sandstone</u>	250'	254'
<u>Shale</u>	254'	258'
<u>Sandstone</u>	258'	262'
<u>Shale</u>	262'	266'
<u>Sandstone</u>	266'	270'
<u>Shale</u>	270'	274'
<u>Sandstone</u>	274'	278'
<u>Shale</u>	278'	282'
<u>Sandstone</u>	282'	286'
<u>Shale</u>	286'	290'
<u>Sandstone</u>	290'	294'
<u>Shale</u>	294'	298'
<u>Sandstone</u>	298'	302'
<u>Shale</u>	302'	306'
<u>Sandstone</u>	306'	310'
<u>Shale</u>	310'	314'
<u>Sandstone</u>	314'	318'
<u>Shale</u>	318'	322'
<u>Sandstone</u>	322'	326'
<u>Shale</u>	326'	330'
<u>Sandstone</u>	330'	334'
<u>Shale</u>	334'	338'
<u>Sandstone</u>	338'	342'
<u>Shale</u>	342'	346'
<u>Sandstone</u>	346'	350'
<u>Shale</u>	350'	354'
<u>Sandstone</u>	354'	358'
<u>Shale</u>	358'	362'
<u>Sandstone</u>	362'	366'
<u>Shale</u>	366'	370'
<u>Sandstone</u>	370'	374'
<u>Shale</u>	374'	378'
<u>Sandstone</u>	378'	382'
<u>Shale</u>	382'	386'
<u>Sandstone</u>	386'	390'
<u>Shale</u>	390'	394'
<u>Sandstone</u>	394'	398'
<u>Shale</u>	398'	402'
<u>Sandstone</u>	402'	406'
<u>Shale</u>	406'	410'
<u>Sandstone</u>	410'	414'
<u>Shale</u>	414'	418'
<u>Sandstone</u>	418'	422'
<u>Shale</u>	422'	426'
<u>Sandstone</u>	426'	430'
<u>Shale</u>	430'	434'
<u>Sandstone</u>	434'	438'
<u>Shale</u>	438'	442'
<u>Sandstone</u>	442'	446'
<u>Shale</u>	446'	450'
<u>Sandstone</u>	450'	454'
<u>Shale</u>	454'	458'
<u>Sandstone</u>	458'	462'
<u>Shale</u>	462'	466'
<u>Sandstone</u>	466'	470'
<u>Shale</u>	470'	474'
<u>Sandstone</u>	474'	478'
<u>Shale</u>	478'	482'
<u>Sandstone</u>	482'	486'
<u>Shale</u>	486'	490'
<u>Sandstone</u>	490'	494'
<u>Shale</u>	494'	498'
<u>Sandstone</u>	498'	502'
<u>Shale</u>	502'	506'
<u>Sandstone</u>	506'	510'
<u>Shale</u>	510'	514'
<u>Sandstone</u>	514'	518'
<u>Shale</u>	518'	522'
<u>Sandstone</u>	522'	526'
<u>Shale</u>	526'	530'
<u>Sandstone</u>	530'	534'
<u>Shale</u>	534'	538'
<u>Sandstone</u>	538'	542'
<u>Shale</u>	542'	546'
<u>Sandstone</u>	546'	550'
<u>Shale</u>	550'	554'
<u>Sandstone</u>	554'	558'
<u>Shale</u>	558'	562'
<u>Sandstone</u>	562'	566'
<u>Shale</u>	566'	570'
<u>Sandstone</u>	570'	574'
<u>Shale</u>	574'	578'
<u>Sandstone</u>	578'	582'
<u>Shale</u>	582'	586'
<u>Sandstone</u>	586'	590'
<u>Shale</u>	590'	594'
<u>Sandstone</u>	594'	598'
<u>Shale</u>	598'	602'
<u>Sandstone</u>	602'	606'
<u>Shale</u>	606'	610'
<u>Sandstone</u>	610'	614'
<u>Shale</u>	614'	618'
<u>Sandstone</u>	618'	622'
<u>Shale</u>	622'	626'
<u>Sandstone</u>	626'	630'
<u>Shale</u>	630'	634'
<u>Sandstone</u>	634'	638'
<u>Shale</u>	638'	642'
<u>Sandstone</u>	642'	646'
<u>Shale</u>	646'	650'
<u>Sandstone</u>	650'	654'
<u>Shale</u>	654'	658'
<u>Sandstone</u>	658'	662'
<u>Shale</u>	662'	666'
<u>Sandstone</u>	666'	670'
<u>Shale</u>	670'	674'
<u>Sandstone</u>	674'	678'
<u>Shale</u>	678'	682'
<u>Sandstone</u>	682'	686'
<u>Shale</u>	686'	690'
<u>Sandstone</u>	690'	694'
<u>Shale</u>	694'	698'
<u>Sandstone</u>	698'	702'
<u>Shale</u>	702'	706'
<u>Sandstone</u>	706'	710'
<u>Shale</u>	710'	714'
<u>Sandstone</u>	714'	718'
<u>Shale</u>	718'	722'
<u>Sandstone</u>	722'	726'
<u>Shale</u>	726'	730'
<u>Sandstone</u>	730'	734'
<u>Shale</u>	734'	738'
<u>Sandstone</u>	738'	742'
<u>Shale</u>	742'	746'
<u>Sandstone</u>	746'	750'
<u>Shale</u>	750'	754'
<u>Sandstone</u>	754'	758'
<u>Shale</u>	758'	762'
<u>Sandstone</u>	762'	766'
<u>Shale</u>	766'	770'
<u>Sandstone</u>	770'	774'
<u>Shale</u>	774'	778'
<u>Sandstone</u>	778'	782'
<u>Shale</u>	782'	786'
<u>Sandstone</u>	786'	790'
<u>Shale</u>	790'	794'
<u>Sandstone</u>	794'	798'
<u>Shale</u>	798'	802'
<u>Sandstone</u>	802'	806'
<u>Shale</u>	806'	810'
<u>Sandstone</u>	810'	814'
<u>Shale</u>	814'	818'
<u>Sandstone</u>	818'	822'
<u>Shale</u>	822'	826'
<u>Sandstone</u>	826'	830'
<u>Shale</u>	830'	834'
<u>Sandstone</u>	834'	838'
<u>Shale</u>	838'	842'
<u>Sandstone</u>	842'	846'
<u>Shale</u>	846'	850'
<u>Sandstone</u>	850'	854'
<u>Shale</u>	854'	858'
<u>Sandstone</u>	858'	862'
<u>Shale</u>	862'	866'
<u>Sandstone</u>	866'	870'
<u>Shale</u>	870'	874'
<u>Sandstone</u>	874'	878'
<u>Shale</u>	878'	882'
<u>Sandstone</u>	882'	886'
<u>Shale</u>	886'	890'
<u>Sandstone</u>	890'	894'
<u>Shale</u>	894'	898'
<u>Sandstone</u>	898'	902'
<u>Shale</u>	902'	906'
<u>Sandstone</u>	906'	910'
<u>Shale</u>	910'	914'
<u>Sandstone</u>	914'	918'
<u>Shale</u>	918'	922'
<u>Sandstone</u>	922'	926'
<u>Shale</u>	926'	930'
<u>Sandstone</u>	930'	934'
<u>Shale</u>	934'	938'
<u>Sandstone</u>	938'	942'
<u>Shale</u>	942'	946'
<u>Sandstone</u>	946'	950'
<u>Shale</u>	950'	954'
<u>Sandstone</u>	954'	958'
<u>Shale</u>	958'	962'
<u>Sandstone</u>	962'	966'
<u>Shale</u>	966'	970'
<u>Sandstone</u>	970'	974'
<u>Shale</u>	974'	978'
<u>Sandstone</u>	978'	982'
<u>Shale</u>	982'	986'
<u>Sandstone</u>	986'	990'
<u>Shale</u>	990'	994'
<u>Sandstone</u>	994'	998'
<u>Shale</u>	998'	1002'

W

E

S

DRILLING FIRM Anderson Drilling
ADDRESS 113 So Willow Dr

DATE Feb 1, 1982
SIGNED Robert Anderson

*If additional space is needed to complete well log, use next consecutive numbered form.

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WF' L LOG AND DRILLING REPORT

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Division of Water
Fountain Square
Columbus, Ohio 43224

592937

COUNTY Franklin TOWNSHIP Verona SECTION OF TOWNSHIP 19
OWNER Wm. J. ... ADDRESS E. Whiting Rd
LOCATION OF PROPERTY E. Whiting Rd

CONSTRUCTION DETAILS

Casing diameter 6 5/8 Length of casing 22'-1"
Type of screen perf. 5" 7/8 Length of screen 12'-0"
Type of pump _____
Capacity of pump _____
Depth of pump setting _____
Date of completion _____

BAILING OR PUMPING TEST

(specify one by circling)

Test rate 15 gpm Duration of test 1 hr
Drawdown 8.5 ft Date Feb 1983
Static level (depth to water) 5-8 ft
Quality (clear, cloudy, taste, odor) _____
Pump installed by _____

WELL LOG*

[illegible]

SKETCH SHOWING LOCATION

Locate in reference to numbered
state highways, street intersections, county roads, etc.

N

W

E

S

East Wheeling Rd.

Salt Creek

Sp. Rd.

DRILLING FIRM B.L.
ADDRESS 2760 Brown Rd.

DATE 11/22/1983
SIGNED [Signature]

* If additional space is needed to complete well log, use next consecutive numbered form.

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














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APPENDIX B

BORING LOGS

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KEY TO BORING LOG SYMBOLS

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2487					
MAJOR DIVISIONS			SYMBOL/ GRAPHIC		DESCRIPTIONS
COARSE-GRAINED SOILS (>50% Smaller Than #200 Sieve)	GRAVELS (More than 50% of coarse fraction is larger than the #4 sieve size.)	Clean gravels with little or no fines	GW		Well-Graded Gravels, Gravel - Sand Mixtures
			GP		Poorly Graded Gravels, Gravels - Sand Mixtures
		Gravels with over 12% fines	GM		Silty Gravels, Poorly Graded Gravel-Sand-Clay Mixtures
			GC		Clayey Gravels, Poorly Graded Gravel-Sand-Clay Mixtures
	SANDS (More than 50% of coarse fraction is smaller than the #4 sieve size.)	Clean sands with little or no fines	SW		Well-Graded Sands, Gravelly Sands
			SP		Poorly Graded Sands, Gravelly Sands
		Sands with over 12% fines	SM		Silty Sands, Poorly Graded Sand-Silt Mixtures
			SC		Clayey Sands, Poorly Graded Sand-Clay Mixtures
FINE-GRAINED SOILS (>50% Smaller Than #200 Sieve)	SILTS AND CLAYS (Liquid limit less than 50)		ML		Inorganic Silts and Very Fine Sands, Silty or Clayey Fine Sands
			CL		Inorganic Clays of Low to Medium Plasticity: Gravelly, Sandy or Silty Clays; Lean Clays
			OL		Organic Clays and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS (Liquid limit greater than 50)		MH		Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts
			CH		Inorganic Clays of High Plasticity Fat Clays
			OH		Organic Clays of Medium to High Plasticity, Organic Silts
HIGHLY ORGANIC SOILS			Pt		Peat and Other Highly Organic Soils



Sample retained for on-site screening.



Sample prepared for laboratory analysis.



Water Table Level

PID Photo-Ionization Detector readings (ppm)



Asphaltic Concrete



Portland Cement Concrete



Cement Grout



Boulders or Bedrock

FIGURE E.1

KEY TO BORING LOG
220th EIS, Zanesville ANG
Zanesville, Ohio

O P T E C H
OPERATIONAL TECHNOLOGIES
CORPORATION

220th EIS, Ohio Air National Guard

Zanesville, OH

O P T E C H**OPERATIONAL TECHNOLOGIES
CORPORATION****LOG OF BORING A-001BH**

Project No.: 1308-191
 Logged By: Earl Parker
 Drilling Co.: Jones Environmental Drilling, Inc.
 Driller: Rob Copeland
 Date Drilled: 6/2/94
 Drilling Method: Hollow Stem Auger



Sampling Method: California Style Sampler
 Depth Drilled: 11.5 ft.
 Depth To Water: Not Encountered
 Date Measured: N/A
 Surface Elevation: 878.1 ft.

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING			
						PID (ppm)	ATHA (ppm)	BTEX (ppb)	Benzene (ppb)
9	5	100	X		Silty clay loam, shale and quartz fragments, light tan, dry and cohesive.	-	-	ND	ND
5	5	100	X		USCS: CH				
5	10	100	X		Silt and clay loam with few fine sand particles, shale and quartz fragments, moist and cohesive.	-	-	ND	ND
10	5	100	X		USCS: CH				
10	12	100	X		Sand, mottled, tan to white, moist.	-	-	ND	ND
15	16				USCS: SW				
					Boring Terminated at 11.5 ft.				

Zanesville, OH

**OPERATIONAL TECHNOLOGIES
CORPORATION**

Project No.:	1308-191	Sampling Method:	California Style Sampler
Logged By:	Earl Parker	Depth Drilled:	11.5 ft.
Drilling Co.:	Jones Environmental Drilling, Inc.	Depth To Water:	Not Encountered
Driller:	Rob Copeland	Date Measured:	N/A
Date Drilled:	6/2/94	Surface Elevation:	877.0 ft.
Drilling Method:	Hollow Stem Auger		

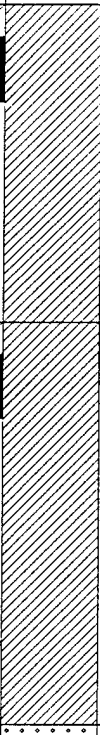
Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING			
						PID (ppm)	ATHA (ppm)	BTEX (ppb)	Benzene (ppb)
18 9 5		100	X		Silt and clay loam, light brown to tan, dry and cohesive, few rock fragments.	-	-	ND	ND
					USCS: CH				
5 5 9 11		100	X		Silt and clay loam, few sand grains, shale and quartz fragments, slightly mottled, moist and cohesive	-	-	ND	ND
				USCS: CH					
10 5 11 19		100	X		Sand, brown and mottled to tan to white, moist.	-	-	ND	ND
					USCS: SW				
					Boring Terminated at 11.5 ft.				

Zanesville, OH

**OPERATIONAL TECHNOLOGIES
CORPORATION**

LOG OF BORING A-003BH

Project No.:	1308-191	Sampling Method:	California Style Sampler
Logged By:	Earl Parker	Depth Drilled:	11.5 ft.
Drilling Co.:	Jones Environmental Drilling, Inc.	Depth To Water:	Not Encountered
Driller:	Rob Copeland	Date Measured:	N/A
Date Drilled:	6/2/94	Surface Elevation:	876.6 ft.
Drilling Method:	Hollow Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING			
						PID (ppm)	ATHA (ppm)	BTEX (ppb)	Benzene (ppb)
10 9 5		100	X ■		Clay loam, light tan, hard, dry and very cohesive, some rock fragments.	-	-	ND	ND
5 8 10 15		100	X ■		Silty, clay loam, shale and quartz fragments, brown, moist, and very cohesive.	-	-	ND	ND
10 4 12 23		100	X X		Sand, tan to light tan, moist. USCS: SW Boring Terminated at 11.5 ft.	-	-	ND	ND
15									

LOG OF BORING A-004BH

Project No.:	1308-191	Sampling Method:	California Style Sampler
Logged By:	Earl Parker	Depth Drilled:	14.2 ft.
Drilling Co.:	Jones Environmental Drilling, Inc.	Depth To Water:	Not Encountered
Driller:	Rob Copeland	Date Measured:	N/A
Date Drilled:	6/2/94	Surface Elevation:	875.8 ft.
Drilling Method:	Hollow Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING			
						PID (ppm)	ATHA (ppm)	BTEX (ppb)	Benzene (ppb)
14 9 6		100			Silty clay loam, light brown and slightly moist, some organic particles. USCS: CH	0.0	0.0	ND	ND
5 4 9 11		90			Sand and silt loam, brown, very fine, cohesive and moist. USCS: CH	0.0	4.8	ND	ND
10 2 12 35		90			Sand and silt, clay loam, cohesive and slightly moist. USCS: CH Sand, mottled, light brown to tan, little silt, slightly moist. USCS: SW	0.0	-	ND	ND
15 50		0			Sand, mottled. Sandstone and shale at bottom of borehole, slightly moist. USCS: SW Boring Terminated at 14.2 ft.	-	-	-	-

Zanesville, OH

**OPERATIONAL TECHNOLOGIES
CORPORATION**

Project No.:	1308-191	Sampling Method:	California Style Sampler
Logged By:	Earl Parker	Depth Drilled:	11.5 ft.
Drilling Co.:	Jones Environmental Drilling, Inc.	Depth To Water:	Not Encountered
Driller:	Rob Copeland	Date Measured:	N/A
Date Drilled:	6/2/94	Surface Elevation:	875.6 ft.
Drilling Method:	Hollow Stem Auger		

[illegible]

Zanesville, OH

OPERATIONAL TECHNOLOGIES
CORPORATION

Project No.:	1308-191	Sampling Method:	California Style Sampler
Logged By:	Earl Parker	Depth Drilled:	11.5 ft.
Drilling Co.:	Jones Environmental Drilling, Inc.	Depth To Water:	Not Encountered
Driller:	Rob Copeland	Date Measured:	N/A
Date Drilled:	6/2/94	Surface Elevation:	874.8 ft.
Drilling Method:	Hollow Stem Auger		

[illegible]

Zanesville, OH

**OPERATIONAL TECHNOLOGIES
CORPORATION**

LOG OF BORING A-007BH

Project No.:	1308-191
Logged By:	Earl Parker
Drilling Co.:	Jones Environmental Drilling, Inc.
Driller:	Rob Copeland
Date Drilled:	6/2/94
Drilling Method:	Hollow Stem Auger

Sampling Method:	California Style Sampler
Depth Drilled:	11.5 ft.
Depth To Water:	Not Encountered
Date Measured:	N/A
Surface Elevation:	876.4 ft.

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING			
						PID (ppm)	ATHA (ppm)	BTEX (ppb)	Benzene (ppb)
5	5 10 17	100			Clay loam, very cohesive and hard, light tan, dry. USCS: CH	-	-	ND	ND
5	4 8 13	100			Clay loam, shale and quartz fragments, light brown, slightly moist. USCS: CH	-	-	ND	ND
10	5 10 8	100			Sand, mottled, tan to white, slightly moist. USCS: SW Boring Terminated at 11.5 ft.	-	-	ND	ND

Zanesville, OH

OPERATIONAL TECHNOLOGIES
CORPORATION

LOG OF BORING B-001BH

Project No.:	1308-191	Sampling Method:	California Style Sampler
Logged By:	Earl Parker	Depth Drilled:	11.5 ft.
Drilling Co.:	Jones Environmental Drilling, Inc.	Depth To Water:	Not Encountered
Driller:	Rob Copeland	Date Measured:	N/A
Date Drilled:	6/3/94	Surface Elevation:	880.5 ft.
Drilling Method:	Hollow Stem Auger		

Depth (ft.)	Blows/6"	% Recovery		Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING			
						PID (ppm)	ATHA (ppm)	BTEX (ppb)	Benzene (ppb)
0 - 8	13	100	X	[Hatched pattern]	Silty clay loam, shale fragments, mottled, slightly moist and cohesive.	-	-		
USCS:					CH				
8 - 14	8 / 10 / 14	100	X	[Hatched pattern]	Silty clay loam, shale and quartz fragments, slightly moist, cohesive. brown.	-	-		
USCS:					CH				
11 - 16	11 / 11 / 16	100	X	[Dotted pattern]	Sand with little silt, brown to tan to white, moist and cohesive. USCS: SM	-	-		
Boring Terminated at 11.5 ft.									

Zanesville, OH

**OPERATIONAL TECHNOLOGIES
CORPORATION**

Project No.:	1308-191	Sampling Method:	California Style Sampler
Logged By:	Earl Parker	Depth Drilled:	11.5 ft.
Drilling Co.:	Jones Environmental Drilling, Inc.	Depth To Water:	Not Encountered
Driller:	Rob Copeland	Date Measured:	N/A
Date Drilled:	6/3/94	Surface Elevation:	880.0 ft.
Drilling Method:	Hollow Stem Auger		

[illegible]

220th EIS, Ohio Air National Guard

Zanesville, OH

O P T E C H**OPERATIONAL TECHNOLOGIES
CORPORATION****LOG OF BORING B-003BH**

Project No.:	1308-191	Sampling Method:	California Style Sampler
Logged By:	Earl Parker	Depth Drilled:	15.5 ft.
Drilling Co.:	Jones Environmental Drilling, Inc.	Depth To Water:	Not Encountered
Driller:	Rob Copeland	Date Measured:	N/A
Date Drilled:	6/3/94	Surface Elevation:	879.7 ft.
Drilling Method:	Hollow Stem Auger		

Depth (ft.)	Blows/6"	% Recovery	Samples	Graphic	DESCRIPTION OF MATERIALS	FIELD SCREENING			
						PID (ppm)	ATHA (ppm)	BTEX (ppb)	Benzene (ppb)
29 15 8		100	X		Silty clay loam. shale and quartz fragments, dry and cohesive.	-	-		
					USCS: CH				
5 6 7 12		100	X		Silty clay loam with sand stringers, shale fragments, moist and cohesive.	-	-		
					USCS: CH				
10 5 6 6		100	X		Sand with little silt, light brown to white, moist and cohesive. Weathered sandstone at bottom of borehole.	-	-		
					USCS: SM				
15 33 34 50			X		Boring Terminated at 15.5 ft.				

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APPENDIX C

SCREENING RESULTS

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Appendix - C
GC Screening Results - Soil
220th EIS, Zanesville ANG, Zanesville, Ohio

Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations				Total BTEX (ppb)
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
CAL - 01	STD	NA	2,411	1,714		4,046.5	8,171.5
CAL - 02	STD	NA	801.2	978.7	981.4	1,849.4	4,610.4
AIR BLANK	NA	NA	ND	ND	ND	ND	ND
SOIL PRACTICE	NA	10	ND	ND	ND	ND	ND
CAL	NA	NA	863	897.4	683.1	2,186.6	4,630.1
AIR BLANK	NA	NA	ND	ND	ND	ND	ND
CAL 1	NA	NA	451.1	377	178.8	508.6	1,515.5
A - 4	0.0 - 1.5	10	ND	ND	ND	ND	ND
A - 4	5.0 - 6.5	10	ND	ND	ND	ND	ND
A - 4	10.0 - 11.5	10	ND	ND	ND	ND	ND
A - 5	0.0 - 1.5	10	ND	ND	ND	ND	ND
A - 5	5.0 - 6.5	10	ND	ND	ND	ND	ND
A - 5	10.5 - 11.5	10	ND	ND	ND	ND	ND
A - 6	0.0 - 1.5	10	ND	ND	ND	ND	ND
A - 6	5.0 - 6.5	10	ND	ND	ND	ND	ND
A - 6	10.5 - 11.5	10	ND	ND	ND	ND	ND
CAL	NA	NA	236.1	179.7	85.7	309.2	910.7
AIR BLANK	NA	NA	ND	ND	ND	ND	ND
A - 7	0.0 - 1.5	10	ND	ND	ND	ND	ND
A - 7	5.0 - 6.5	10	ND	ND	ND	ND	ND

Appendix - C (Concluded)
GC Screening Results - Soil
220th EIS, Zanesville ANG, Zanesville, Ohio

Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations				Total BTEX (ppb)
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
A - 7	10.0 - 11.5	10	ND	ND	ND	ND	ND
A - 3	0.0 - 1.5	10	ND	ND	ND	ND	ND
A - 3	5.0 - 6.5	10	ND	ND	ND	ND	ND
A - 3	10.5 - 11.5	10	ND	ND	ND	ND	ND
A - 1	0.0 - 1.5	10	ND	ND	ND	ND	ND
A - 1	5.0 - 6.5	10	ND	ND	ND	ND	ND
A - 1	10.0 - 11.5	10	ND	ND	ND	ND	ND
A - 2	0.0 - 1.5	10	ND	ND	ND	ND	ND
A - 2	5.0 - 6.5	10	ND	ND	ND	ND	ND
A - 2	10.0 - 11.5	10	ND	ND	ND	ND	ND
CAL	NA	NA	270.9	202.3	100	303.6	876.8
AIR BLANK	NA	NA	ND	ND	ND	ND	ND

BLS - Below land surface.
ppb - Parts per billion.
ND - Non detect.
NA - Not applicable.
CAL - Calibration.
STD - Standard.

AIR BLANK

PHOTODUAC

STOP # 500.0
SAMPLE LIBRARY 1 JUN 1 1994 15:40
ANALYSIS # 4 ZINC SULFATE 100 ST
INTERNAL TEMP 22 C-100000
GAIN 2 SOIL PRACTICE
UNCORRECTED DATA PEAK R.T. 112.1400
REMARKS 1 Ca 6 112.1400

SOIL PRACTICE

PHOTODUAC

STOP # 500.0
SAMPLE LIBRARY 1 JUN 1 1994 15:40
ANALYSIS # 4 ZINC SULFATE 100 ST
INTERNAL TEMP 22 C-100000
GAIN 2 SOIL PRACTICE
UNCORRECTED DATA PEAK R.T. 112.1400
REMARKS 1 Ca 6 112.1400

CAL

PHOTODUAC

STOP # 500.0
SAMPLE LIBRARY 1 JUN 2 1994 8:30
ANALYSIS # 5 ZINC SULFATE 100 ST
INTERNAL TEMP 24 C-100000
GAIN 2 CAL

UNCORRECTED DATA PEAK R.T. 112.1400
REMARKS 1 21.0 112.1400
2 21.0 112.1400
3 11.2 112.1400
4 11.2 112.1400
5 22.8 112.1400
6 11.0 112.1400
7 11.0 112.1400
8 11.0 112.1400

1	COMPUND	ID #	R.T.	UNIT
1	BENZENE	1	24.4	1.000 PPM
2	TOLUENE	2	143.6	1.000 PPM
3	ETHYLBENZENE	3	91.9	1.000 PPM
4	m,p-XYLENE	4	333.4	2.000 PPM
5	o-XYLENE	5	402.5	1.000 PPM

1	COMPUND	ID #	R.T.	UNIT
1	BENZENE	1	24.4	1.000 PPM
2	TOLUENE	2	143.6	1.000 PPM
3	ETHYLBENZENE	3	91.9	1.000 PPM
4	m,p-XYLENE	4	333.4	2.000 PPM
5	o-XYLENE	5	402.5	1.000 PPM

A-4, 10.0'-11.5' BLS

PHOTOVAC

SAMPLE LIBRARY # 10
ANALYST # 10
INTERNO TEMP 25
GAIN 2
DATE 10-01-11-00

A-5, 0.0'-1.5' BLS

PHOTOVAC

SAMPLE LIBRARY # 12
ANALYST # 12
INTERNO TEMP 25
GAIN 2
DATE 01-00-11-00

PHOTOVAC

A-5, 5.0'-6.5' BLS

PHOTOVAC

SAMPLE LIBRARY # 13
ANALYST # 13
INTERNO TEMP 25
GAIN 2
DATE 01-00-11-00



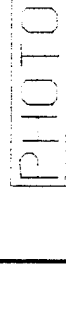
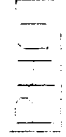
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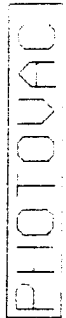

A-5, 10.5'-11.5' BLS

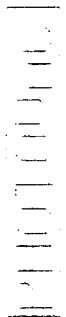

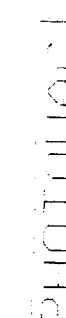
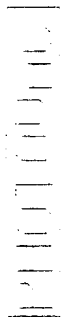
PHOTOVAC





SAMPLE LIBRARY # 15
ANALYST # 15
INTERNO TEMP 25
GAIN 2
DATE 01-00-11-00

PHOTOVAC

A-6, 0.0'-1.5' BLS	A-6, 5.0'-6.5' BLS	A-6, 10.5'-11.5' BLS	CAL
 <p>PHOTOGRAPH</p>	 <p>PHOTOGRAPH</p>	 <p>PHOTOGRAPH</p>	 <p>PHOTOGRAPH</p>

AIR BLANK	A-7, 0.0'-1.5' BLS	A-7, 5.0'-6.5' BLS	A-7, 10.0'-11.5' BLS
 <p> SLOTTED SAMPLE LIBRARY 1 JUN 2 1994 15:12 ANALYSIS # 20 ZOOLOGICAL PR-51 INTENSIT. TEMP 25 1-100000 GAIN 2 0-2 0.0-1.5 BLS PHOTODU 1004 1100 0.1 0.10 1.0 BORTAGE 1 21.3 20.3 gPa </p>	 <p> SLOTTED SAMPLE LIBRARY 1 JUN 2 1994 15:12 ANALYSIS # 20 ZOOLOGICAL PR-51 INTENSIT. TEMP 25 1-100000 GAIN 2 0-2 0.0-1.5 BLS PHOTODU 1004 1100 0.1 0.10 1.0 BORTAGE 1 21.3 20.3 gPa </p>	 <p> SLOTTED SAMPLE LIBRARY 1 JUN 2 1994 15:11 ANALYSIS # 21 ZOOLOGICAL PR-51 INTENSIT. TEMP 25 1-100000 GAIN 2 0-2 0.0-1.5 BLS PHOTODU 1004 1100 0.1 0.10 1.0 BORTAGE 1 21.3 20.3 gPa </p>	 <p> SLOTTED SAMPLE LIBRARY 1 JUN 2 1994 15:13 ANALYSIS # 22 ZOOLOGICAL PR-51 INTENSIT. TEMP 25 1-100000 GAIN 2 0-2 0.0-1.5 BLS PHOTODU 1004 1100 0.1 0.10 1.0 BORTAGE 1 21.3 20.3 gPa </p>

A-3, 0.0'-1.5' BLS	A-3, 5.0'-6.5' BLS	A-3, 10.5'-11.5' BLS	A-1, 0.0'-1.5' BLS
 <p>PHOTOGRAPH</p>	 <p>PHOTOGRAPH</p>	 <p>PHOTOGRAPH</p>	 <p>PHOTOGRAPH</p>

A-1, 5.0'-6.5' BLS	A-1, 10.0'-11.5 BLS	A-2, 0.0'-1.5' BLS	A-2, 5.0'-6.5' BLS
 <p> SITE # 10000 SAMPLE LOCATION 1 JUN 2 1990 1615H ANALYSTS # 28 SRESOLUTION-PA-SI INTERNO TEL# 26 1-186680 GAIN 2 4-1 CORRECTION FACT 1100 1.1, 1000 1.0 REFLECT 1 50.1 2.2 30. </p>	 <p> SITE # 10000 SAMPLE LOCATION 1 JUN 2 1990 1615H ANALYSTS # 28 SRESOLUTION-PA-SI INTERNO TEL# 26 1-186680 GAIN 2 4-1 CORRECTION FACT 1100 1.1, 1000 1.0 REFLECT 1 50.1 2.2 30. </p>	 <p> SITE # 10000 SAMPLE LOCATION 1 JUN 2 1990 1210 ANALYSTS # 29 SRESOLUTION-PA-SI INTERNO TEL# 26 1-186680 GAIN 2 4-2 0.3 1.5 40.0 CORRECTION FACT 1100 1.1, 1000 1.0 REFLECT 1 50.1 2.2 30. </p>	 <p> SITE # 10000 SAMPLE LOCATION 1 JUN 2 1990 1210 ANALYSTS # 29 SRESOLUTION-PA-SI INTERNO TEL# 26 1-186680 GAIN 2 4-2 0.3 1.5 40.0 CORRECTION FACT 1100 1.1, 1000 1.0 REFLECT 1 50.1 2.2 30. </p>

A-2, 10.0'-11.5' BLS

PHOTOVAC

PHOTOVAC

CAL

PHOTOVAC

PHOTOVAC

AIR BLANK

PHOTOVAC

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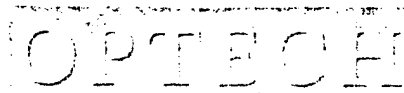
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APPENDIX D

SITE INSPECTION DERIVED WASTE MANAGEMENT

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OPERATIONAL TECHNOLOGIES
CORPORATION

July 26, 1994

Mr. Roger Jones
121 SG/EM
Rickenbacker Air National Guard Base
7556 S. Perimeter Rd.
Columbus, OH 43217-5910

Dear Mr. Jones:

I am writing you concerning the contents of nine drums of site inspection-derived waste which was generated during the recent Site Inspection at the 220th Engineering Installation Squadron, Zanesville ANG. Eight of these drums contain soil cuttings and one contains decontamination water. The attached table contains the recommended disposition for each of these drums. These recommendations are based on guidance provided by Mr. John Rochotte of the Ohio Environmental Protection Agency (OEPA) in a letter dated January 11, 1994 (copy provided), as well as in recent discussions with Mr. Rochotte. Soil cuttings with detected contaminants below action levels are to be disposed of as solid waste, while those with detected contaminants above action levels are to be disposed of as hazardous waste. Soils in which TPH is the only contaminant above action levels may be disposed of in a solid waste landfill which is permitted to receive TPH-contaminated soils. Mr. Rochotte suggested the Muskingum County Sewer Service be contacted to inquire whether the decontamination water could be disposed of in the sanitary sewer at the Station.

Also included with this letter is one table per drum describing the maximum analyte concentrations detected in soils contained in that drum, along with their comparison to action levels. Mr. Dan Wyatt of ANGRC/CEVR requested that I send you this information so that you can proceed in obtaining authorization and disposal of the contents of these drums. If you have any questions regarding this information, please do not hesitate to contact me at (210) 731-0000. Thank you for your time.

Sincerely,

Matthew Alexander, Ph.D.
Manager of Environmental Technology Development

Enclosure: as stated

cc: Dan Wyatt, ANGRC/CEVR
Maj. Jeffrey Lewis, 220th EIS, Zanesville ANG
Air National Guard file

**Recommended Disposition of Inspection Derived Waste
220th EIS, Zanesville ANGS, Zanesville, Ohio**

Drum Number/ Material	Origin	Recommended Disposition	Rationale
1/Soil	B-001BH B-002BH	Dispose in solid waste landfill.	Soil analysis results did not exceed State action levels or PRGs.
2/Soil	B-002BH B-003BH	Dispose in solid waste landfill.	Soil analysis results did not exceed State action levels or PRGs.
3/Soil	A-001BH A-002BH	Dispose in solid waste landfill.	Soil analysis results did not exceed State action levels ore PRGs.
4/Soil	A-007BH	Dispose in solid waste landfill.	Soil analysis results did not exceed State action levels or PRGs.
5/Soil	A-006BH	Dispose as a hazardous waste.	Soil analysis results show benzo(a)pyrene exceeds State PRGs.
6/Soil	A-004BH	Dispose in solid waste landfill permitted to accept TPH-contaminated soils.	Soil analysis results show TPH exceeds State action levels.
7/Soil	A-002BH A-003BH	Dispose in solid waste landfill.	Soil analysis results did not exceed State action levels or PRGs.
8/Soil	A-005BH	Dispose in solid waste landfill permitted to accept TPH-contaminated soils.	Soil analysis results show TPH exceeds State action levels.
9/Water	Decontamination Wastewater	Obtain approval from Muskingum County Sewer Service for disposal through oil/water separator at Zanesville ANGS.	Analytes washed from sampling equipment are significantly diluted by the total volume of decontamination water.

BH – Borehole.

TPH – Total Petroleum Hydrocarbons.

PRG – Preliminary Remediation Goal.



State of Ohio Environmental Protection Agency

Southeast District Office

2195 Front Street
Logan, Ohio 43138-9031
(614) 385-8501
FAX (614) 385-6490

George V. Voinovich
Governor

January 13, 1994

RE: MUSKINGUM COUNTY
ZANESVILLE ANGB
DERR CORRESPONDENCE

Mr. Matthew L. Alexander, Ph.D.
Operational Technologies Corporation
4100 N.W., Loop 410
San Antonio, Texas 78229

Dear Mr. Alexander:

OPEA Guidance for Preparation of Zanesville, Ohio ANGB Work Plan

Enclosed are some pertinent chapters from Ohio EPA's Guidance Document entitled "Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring Programs" that should aid you in the development of the above referenced workplan. Also included is a copy of Ohio Administrative Code 3745-9-10 which applies to abandonment of wells used as a drinking water source. The methods outlined in Chapter 9 of the Guidance Document also apply to the abandonment of former drinking water wells.

Regarding soil and ground water cleanup levels, the State of Ohio does not currently have established constituent specific cleanup goals except for petroleum contaminated soil cleanups. This level is currently established at 105 ppm TPH using EPA method 8015 (modified) or method 418.1, whichever is appropriate. Ohio EPA applies risk based cleanup levels established in accordance with USEPA's "Risk Assessment Guidance for Superfund", Volume 1, Part A, EPA/540/1-89/002, and Part B, EPA/540/R-92/003. Ohio EPA's "How Clean is Clean?" policy (enclosed) should also be followed. Should contamination be detected at the Zanesville site, please contact this office to discuss possible cleanup strategies.

Regarding investigation derived wastes, Ohio EPA is currently developing a policy for managing this waste, but is not yet final. The procedure now in place is the following:

- Investigation derived wastes must be contained in weather resistant containers prior to evaluation (e.g. 55 gallon drums for soils, plastic or metal tanks for liquids).
- Investigation sample results may be used to guide decision making regarding disposition of derived waste.



Mr. Matthew L. Alexander, Ph.D.
January 13, 1994
Page 2

- Investigation derived wastes must be evaluated based on sampling data. RCRA listed wastes or wastes that test hazardous by characteristic must be disposed of accordingly. Soils with detectible levels of constituents but not hazardous are considered solid waste and must be disposed of in a licensed solid waste landfill. Non-hazardous wastewaters are normally disposed of via a POTW facility with the operator's permission.

If you have any questions regarding site investigation and/or cleanup in Ohio, please feel free to call this office at 614-385-8501.

Sincerely,



John Rochotte
Site Coordinator
Division of Emergency and Remedial Response

JR/mr

Enclosures

cc: Saul St. Alverez, Rickenbacker ANGB

INVESTIGATION DERIVED WASTE LOG

Drum	Contents (Water/Soil Cuttings/Borehole/MW/Decon)	% Full
1	Soil B - 001 BH B - 002 BH	95 %
2	Soil B - 003 BH B - 002 BH	100 %
3	Soil A - 001 BH A - 002 BH	95 %
4	Soil A - 007 BH	85 %
5	Soil A - 006 BH	75 %
6	Soil A - 004 BH	70 %
7	Soil A - 002 BH A - 003 BH	95 %
8	Soil A - 005 BH	70 %
9	WATER DECON WATER	65 %
—	NONE	—

Location of Drums: GRAVEL PARKING AREA EAST OF Bldg 5.
 Date Stored: 6/3/94
 Site Manager: EARL E PARKER

Site Inspection Derived Waste
Drum 1 Containing Cuttings from Boreholes B-001BH and B-002BH
220th EIS, Zanesville ANG, Zanesville, Ohio

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration (mg/kg)
Lead	43	NA

mg/kg - milligrams per kilogram.
NA - not available.

Site Inspection Derived Waste
Drum 2 Containing Cuttings from Boreholes B-002BH and B-003BH
220th EIS, Zanesville ANG, Zanesville, Ohio

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration (mg/kg)
Lead	7.9	NA

mg/kg - milligrams per kilogram.
NA - not available

Site Inspection Derived Waste
 Drum 3 Containing Cuttings from Boreholes A-001BH and A-002BH
 220th EIS, Zanesville ANG, Zanesville, Ohio

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration (mg/kg)
VOCs		
None	--	--
SVOCs		
None	--	--
TPH	71	105*
Metals		
Arsenic	16	0.37*
Beryllium	1.0	0.15*
Cadmium	1.2	140*
Chromium	7	1,400*
Copper	25	NA
Nickel	14	5,400*
Lead	15	NA
Zinc	57	81,000*

mg/kg - milligrams per kilogram.

VOCs - Volatile Organic Compounds.

SVOCs - Semivolatile Organic Compounds.

TPH - Total Petroleum Hydrocarbons.

*Ohio EPA action level.

*Ohio EPA provided Preliminary Remediation Goals.

NA - not available.

Site Inspection Derived Waste
Drum 4 Containing Cuttings from Borehole A-007BH
220th EIS, Zanesville ANGS, Zanesville, Ohio

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration (mg/kg)
VOCs		
None	--	--
SVOCs		
None	--	--
TPH	23	105*
Metals		
Arsenic	9	0.37 [‡]
Beryllium	0.9	0.15 [‡]
Cadmium	0.19	140 [‡]
Chromium	9	1,400 [‡]
Copper	22	NA
Nickel	16	5,400 [‡]
Lead	11	NA
Zinc	52	81,000 [‡]

mg/kg - milligrams per kilogram.

VOCs - Volatile Organic Compounds.

SVOCs - Semivolatile Organic Compounds.

TPH - Total Petroleum Hydrocarbons.

*Ohio EPA action level.

[‡]Ohio EPA provided Preliminary Remediation Goals.

NA - not available.

Site Inspection Derived Waste
Drum 5 Containing Cuttings from Borehole A-006BH
220th EIS, Zanesville ANGS, Zanesville, Ohio

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration (mg/kg)
VOCs		
Tetrachloroethene	.007	20,000 ²
SVOCs		
Benzo(a)anthracene	2.2	NA
Benzo(b)fluoranthene	1.7	NA
Benzo(k)fluoranthene	1.8	NA
Benzo(a)pyrene	2.1	0.78 ²
Chrysene	1.8	NA
Fluoranthene	4.0	82,000 ²
Pyrene	2.6	61,000 ²
TPH	20	105 ¹
Metals		
Arsenic	6	0.37 ²
Beryllium	0.7	0.15 ²
Cadmium	0.90	140 ²
Chromium	10	1,400 ²
Copper	22	NA
Nickel	17	5,400 ²
Lead	16	NA
Zinc	57	81,000 ²

mg/kg - milligrams per kilogram.

VOCs - Volatile Organic Compounds.

SVOCs - Semivolatile Organic Compounds.

TPH - Total Petroleum Hydrocarbons.

¹Ohio EPA action level.

²Ohio EPA provided Preliminary Remediation Goals.

NA - not available.

Site Inspection Derived Waste
Drum 6 Containing Cuttings from Borehole A-004BH
220th EIS, Zanesville ANG, Zanesville, Ohio

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration (mg/kg)
VOCs		
None	--	--
SVOCs		
None	--	--
TPH	1,600	105 ²
Metals		
Arsenic	9	0.37 ²
Beryllium	0.8	0.15 ²
Cadmium	2.6	140 ²
Chromium	8	1,400 ²
Copper	27	NA
Nickel	10	5,400 ²
Lead	16	NA
Zinc	96	81,000 ²

mg/kg - milligrams per kilogram.

VOCs - Volatile Organic Compounds.

SVOCs - Semivolatile Organic Compounds.

TPH - Total Petroleum Hydrocarbons.

¹Ohio EPA action level.

²Ohio EPA provided Preliminary Remediation Goals.

NA - not available.

Site Inspection Derived Waste
Drum 7 Containing Cuttings from Boreholes A-002BH and A-003BH
220th EIS, Zanesville ANG, Zanesville, Ohio

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration (mg/kg)
VOCs		
None	--	--
SVOCs		
None	--	--
TPH	71	105*
Metals		
Arsenic	12	0.37*
Beryllium	1.0	0.15*
Cadmium	0.17	140*
Chromium	16	1,400*
Copper	35	NA
Nickel	14	5,400*
Lead	10	NA
Zinc	57	8,100*

mg/kg - milligrams per kilogram.

VOCs - Volatile Organic Compounds.

SVOCs - Semivolatile Organic Compounds.

TPH - Total Petroleum Hydrocarbons.

*Ohio EPA action level.

*Ohio EPA provided Preliminary Remediation Goals.

NA - not available.

Site Inspection Derived Waste
Drum 8 Containing Cuttings from Borehole A-005BH
220th EIS, Zanesville ANG, Zanesville, Ohio

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration (mg/kg)
VOCs		
Tetrachloroethene	.017	20,000 [‡]
SVOCs		
Fluoranthene	2.0	82,000 [‡]
Phenanthrene	0.92	NA
Pyrene	0.72	61,000 [‡]
TPH	370	105 [‡]
Metals		
Arsenic	15	0.37 [‡]
Beryllium	1.2	0.15 [‡]
Cadmium	.75	140 [‡]
Chromium	30	1,400 [‡]
Copper	20	NA
Nickel	10	5,400 [‡]
Lead	23	NA
Zinc	91	81,000 [‡]

mg/kg - milligrams per kilogram.

VOCs - Volatile Organic Compounds.

SVOCs - Semivolatile Organic Compounds.

TPH - Total Petroleum Hydrocarbons.

[‡]Ohio EPA action level.

[‡]Ohio EPA provided Preliminary Remediation Goals.

NA - not available.

APPENDIX E

ANALYTICAL REPORTS

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Appendix E
Summary of Volatile Organic Compounds Detected in Soil Samples at AOC-A
220th EIS, Zanesville ANGS, Zanesville, Ohio
(Results in micrograms per kilogram unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		A-01 BH INT 1 6/2/94 9406119.11		A-01 BH INT 2 6/2/94 9406119.12		A-02 BH INT 1 6/2/94 9406119.13		A-02 BH INT 2 6/2/94 9406119.14		A-03 BH INT 1 6/2/94 9406119.09		A-03 BH INT 2 6/2/94 9406119.1		A-04 BH INT 1 6/2/94 9406119.01	
Volatile Organics	Matrix	Soil		Soil		Soil		Soil		Soil		Soil		Soil	
Acetone		10U		10U		10U		10U		34B		51B		46B	
Benzene		5U		5U		5U		5U		5U		5U		5U	
Bromodichloromethane		5U		5U		5U		5U		5U		5U		5U	
Bromoform		5U		5U		5U		5U		5U		5U		5U	
Bromomethane		10U		10U		10U		10U		10U		10U		10U	
2-Butanone		20U		20U		20U		20U		20U		20U		20U	
Carbon Disulfide		5U		5U		5U		5U		5U		5U		5U	
Carbon Tetrachloride		5U		5U		5U		5U		5U		5U		5U	
Chlorobenzene		5U		5U		5U		5U		5U		5U		5U	
Chloroethane		10U		10U		10U		10U		10U		10U		10U	
2-Chloroethylvinylether		10U		10U		10U		10U		10U		10U		10U	
Chloroform		5U		5U		5U		5U		5U		5U		5U	
Chloromethane		10U		10U		10U		10U		10U		10U		10U	
Dibromochloromethane		5U		5U		5U		5U		5U		5U		5U	
1,1-Dichloroethane		5U		5U		5U		5U		5U		5U		5U	
1,1-Dichloroethene		5U		5U		5U		5U		5U		5U		5U	
1,2-Dichloroethane		5U		5U		5U		5U		5U		5U		5U	
total-1,2-Dichloroethene		5U		5U		5U		5U		5U		5U		5U	
1,2-Dichloropropane		5U		5U		5U		5U		5U		5U		5U	
cis-1,3-Dichloropropene		5U		5U		5U		5U		5U		5U		5U	
trans-1,3-Dichloropropene		5U		5U		5U		5U		5U		5U		5U	
Ethylbenzene		5U		5U		5U		5U		5U		5U		5U	
2-Hexanone		10U		10U		10U		10U		10U		10U		10U	
Methylene Chloride		5U		5U		5U		5U		5U		5U		5U	
4-Methyl-2-Pentanone		10U		10U		10U		10U		10U		10U		10U	
Styrene		5U		5U		5U		5U		5U		5U		5U	
1,1,2,2-Tetrachloroethane		5U		5U		5U		5U		5U		5U		5U	
Tetrachloroethene		5U		5U		5U		5U		5U		5U		5U	
Toluene		5U		5U		5U		5U		5U		5U		5U	
1,1,1-Trichloroethane		5U		5U		5U		5U		5U		5U		5U	
1,1,2-Trichloroethane		5U		5U		5U		5U		5U		5U		5U	
Trichloroethene		5U		5U		5U		5U		5U		5U		5U	
Trichlorofluoromethane		5U		5U		5U		5U		5U		5U		5U	
Vinyl Acetate		10U		10U		10U		10U		10U		10U		10U	
Vinyl Chloride		10U		10U		10U		10U		10U		10U		10U	
Xylenes (total)		5U		5U		5U		5U		5U		5U		5U	

U - Indicates compound analyzed for but not detected.
BH - Borehole

B - Indicates analyte found in the associated blank as well as in the sample.
INT - Interval

Appendix E
Summary of Volatile Organic Compounds Detected in Soil Samples at AOC-A
220th EIS, Zanesville ANG, Zanesville, Ohio
 (Results in micrograms per kilogram unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	A-04 BH INT 2 6/2/94 9406119.02	A-05 BH INT 1 6/2/94 9406119.03	A-05 BH INT 2 6/2/94 9406119.04	A-06 BH INT 1 6/2/94 9406119.05	A-06 BH INT 2 6/2/94 9406119.06	A-07 BH INT 1 6/2/94 9406119.07	A-07 BH INT 2 6/2/94 9406119.08
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Volatile Organics	52B	24B	18B	20B	20B	19B	11B
Acetone	5U	5U	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U	5U
Bromomethane	10U	10U	10U	10U	10U	10U	10U
2-Butanone	20U	20U	20U	20U	20U	20U	20U
Carbon Disulfide	5U	5U	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U	5U
Chloroethane	10U	10U	10U	10U	10U	10U	10U
2-Chloroethylvinylether	10U	10U	10U	10U	10U	10U	10U
Chloroform	5U	5U	5U	5U	5U	5U	5U
Chloromethane	10U	10U	10U	10U	10U	10U	10U
Dibromochloromethane	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U	5U
total-1,2-Dichloroethene	5U	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U	5U
2-Hexanone	10U	10U	10U	10U	10U	10U	10U
Methylene Chloride	5U	5U	5U	5U	5U	5U	5U
4-Methyl-2-Pentanone	10U	10U	10U	10U	10U	10U	10U
Styrene	5U	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U	5U
Tetrachloroethene	5U	17	5U	7	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U	5U
Trichlorofluoromethane	5U	5U	5U	5U	5U	5U	5U
Vinyl Acetate	10U	10U	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U	10U	10U
Xylenes (total)	5U	5U	5U	5U	5U	5U	5U

U - Indicates compound analyzed for but not detected.
 BH - Borehole

B - Indicates analyte found in the associated blank as well as in the sample.
 INT - Interval

Appendix E
Summary of Semivolatile Organic Compound Detected in Soil Samples at AOC-A
220th EIS, Zanesville ANG, Zanesville, Ohio
(Results in micrograms per kilogram unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	A-01 BH INT 1 6/2/94 9406119.11	A-01 BH INT 2 6/2/94 9406119.12	A-02 BH INT 1 6/2/94 9406119.13	A-02 BH INT 2 6/2/94 9406119.14	A-03 BH INT 1 6/2/94 9406119.09	A-03 BH INT 2 6/2/94 9406119.10	A-04 BH INT 1 6/2/94 9406119.01
Semivolatile Organics	Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Acenaphthene		330U	330U	330U	330U	330U	330U
Acenaphthylene		330U	330U	330U	330U	330U	330U
Aniline		330U	330U	330U	330U	330U	330U
Anthracene		330U	330U	330U	330U	330U	330U
Benzo(a)Anthracene		330U	330U	330U	330U	330U	330U
Benzo(b)Fluoranthene		330U	330U	330U	330U	330U	330U
Benzo(k)Fluoranthene		330U	330U	330U	330U	330U	330U
Benzo(a)Pyrene		330U	330U	330U	330U	330U	330U
Benzoic Acid		1600U	1600U	1600U	1600U	1600U	1600U
Benzo(g,h,i)Perylene		330U	330U	330U	330U	330U	330U
Benzyl alcohol		330U	330U	330U	330U	330U	330U
4-Bromophenylphenyl ether		330U	330U	330U	330U	330U	330U
Butylbenzylphthalate		330U	330U	330U	330U	330U	330U
di-n-Butyl phthalate		330U	330U	330U	330U	330U	330U
Carbazole		330U	330U	330U	330U	330U	330U
4-Chloroaniline		330U	330U	330U	330U	330U	330U
bis(2-Chloroethoxy)Methane		330U	330U	330U	330U	330U	330U
bis(2-Chloroethyl)Ether		330U	330U	330U	330U	330U	330U
bis(2-Chloroisopropyl)Ether		330U	330U	330U	330U	330U	330U
4-Chloro-3-Methylphenol		330U	330U	330U	330U	330U	330U
2-Chloronaphthalene		330U	330U	330U	330U	330U	330U
2-Chlorophenol		330U	330U	330U	330U	330U	330U
4-Chlorophenylphenyl ether		330U	330U	330U	330U	330U	330U
Chrysene		330U	330U	330U	330U	330U	330U
Dibenz(a,h)Anthracene		330U	330U	330U	330U	330U	330U
Dibenzofuran		330U	330U	330U	330U	330U	330U
1,2-Dichlorobenzene		330U	330U	330U	330U	330U	330U
1,3-Dichlorobenzene		330U	330U	330U	330U	330U	330U
1,4-Dichlorobenzene		330U	330U	330U	330U	330U	330U
3,3'-Dichlorobenzidine		330U	330U	330U	330U	330U	330U
2,4-Dichlorophenol		330U	330U	330U	330U	330U	330U
Diethylphthalate		330U	330U	330U	330U	330U	330U
2,4-Dimethylphenol		330U	330U	330U	330U	330U	330U
Dimethyl Phthalate		330U	330U	330U	330U	330U	330U
1,6-Dinitro-2-Methylphenol		800U	800U	800U	800U	800U	800U

U - Indicates compound analyzed for but not detected.
BH - Borehole

INT - Interval

Appendix E
Summary of Semivolatile Organic Compound Detected in Soil Samples at AOC-A
220th EIS, Zanesville ANG, Zanesville, Ohio
 (Results in micrograms per kilogram unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		A-01 BH INT 1 6/2/94 9406119.11		A-01 BH INT 2 6/2/94 9406119.12		A-02 BH INT 1 6/2/94 9406119.13		A-02 BH INT 2 6/2/94 9406119.14		A-03 BH INT 1 6/2/94 9406119.09		A-03 BH INT 2 6/2/94 9406119.10		A-04 BH INT 1 6/2/94 9406119.01	
Semivolatile Organics	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
2,4-Dinitrophenol		880U	800U	330U	800U	330U	330U	330U	800U	800U	330U	330U	800U	330U	800U
2,4-Dinitrotoluene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
2,6-Dinitrotoluene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
1,2-Diphenylhydrazine		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
bis(2-Ethylhexyl)Phthalate		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Fluoranthene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Fluorene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Hexachlorobenzene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Hexachlorobutadiene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Hexachloroethane		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Hexachlorocyclopentadiene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Indeno(1,2,3-cd)Pyrene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Isophorone		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
2-Methylnaphthalene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
2-Methylphenol		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
4-Methylphenol		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Naphthalene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
2-Nitroaniline		880U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U
3-Nitroaniline		880U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U
4-Nitroaniline		880U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U
Nitrobenzene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
2-Nitrophenol		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
4-Nitrophenol		880U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U
N-Nitrosodiphenylamine (1)		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
N Nitroso Di n Propylamine		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Di-n-Octyl Phthalate		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Pentachlorophenol		880U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U
Phenanthrene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Phenol		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Pyrene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
Pyridine		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
1,2,4-Trichlorobenzene		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U
2,4,5-Trichlorophenol		880U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U	800U
2,4,6-Trichlorophenol		330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U	330U

U - Indicates compound analyzed for but not detected.
 BH - Borehole

INT - Interval

Appendix E
Summary of Semivolatile Organic Compounds Detected in Soil Samples at AOC-A
220th EIS, Zanesville ANG, Zanesville, Ohio

(Results in micrograms per kilogram unless otherwise noted.)

Semivolatile Organics	Matrix	Location No.: A-04 BH INT 2		A-05 BH INT 1		A-05 BH INT 2		A-06 BH INT 1		A-06 BH INT 2		A-07 BH INT 1		A-07 BH INT 2	
		Sample Date: 6/2/94	9406119.02	6/2/94	9406119.03	6/2/94	9406119.04	6/2/94	9406119.05	6/2/94	9406119.06	6/2/94	9406119.07	6/2/94	9406119.08
Acenaphthene		330U		660U		330U		1600U		330U		330U		330U	
Acenaphthylene		330U		660U		330U		1600U		330U		330U		330U	
Aniline		330U		660U		330U		1600U		330U		330U		330U	
Anthracene		330U		660U		330U		1600U		330U		330U		330U	
Benzo(a)Anthracene		330U		660U		330U		2200		330U		330U		330U	
Benzo(b)Fluoranthene		330U		660U		330U		1700		330U		330U		330U	
Benzo(k)Fluoranthene		330U		660U		330U		1800		330U		330U		330U	
Benzo(a)Pyrene		330U		660U		330U		2100		330U		330U		330U	
Benzoic Acid		1600U		3200U		1600U		800U		1600U		1600U		1600U	
Benzo(g,h,i)Perylene		330U		660U		330U		1600U		330U		330U		330U	
Benzyl alcohol		330U		660U		330U		1600U		330U		330U		330U	
4-Bromophenylphenyl ether		330U		660U		330U		1600U		330U		330U		330U	
Butylbenzylphthalate		330U		660U		330U		1600U		330U		330U		330U	
di-n-Butyl phthalate		330U		660U		330U		1600U		330U		330U		330U	
Carbazole		330U		660U		330U		1600U		330U		330U		330U	
4-Chloroaniline		330U		660U		330U		1600U		330U		330U		330U	
bis(2-Chloroethoxy)Methane		330U		660U		330U		1600U		330U		330U		330U	
bis(2-Chloroethyl)Ether		330U		660U		330U		1600U		330U		330U		330U	
bis(2-Chloroisopropyl)Ether		330U		660U		330U		1600U		330U		330U		330U	
4-Chloro-3-Methylphenol		330U		660U		330U		1600U		330U		330U		330U	
2-Chloronaphthalene		330U		660U		330U		1600U		330U		330U		330U	
2-Chlorophenol		330U		660U		330U		1600U		330U		330U		330U	
4-Chlorophenylphenyl ether		330U		660U		330U		1600U		330U		330U		330U	
Chrysene		330U		660U		330U		1600U		330U		330U		330U	
Dibenz(a,h)Anthracene		330U		660U		330U		1600U		330U		330U		330U	
Dibenzofuran		330U		660U		330U		1600U		330U		330U		330U	
1,2-Dichlorobenzene		330U		660U		330U		1600U		330U		330U		330U	
1,3-Dichlorobenzene		330U		660U		330U		1600U		330U		330U		330U	
1,4-Dichlorobenzene		330U		660U		330U		1600U		330U		330U		330U	
3,3'-Dichlorobenzidine		330U		660U		330U		1600U		330U		330U		330U	
2,4-Dichlorophenol		330U		660U		330U		1600U		330U		330U		330U	
Diethylphthalate		330U		660U		330U		1600U		330U		330U		330U	
2,4-Dimethylphenol		330U		660U		330U		1600U		330U		330U		330U	
Dimethyl Phthalate		330U		660U		330U		1600U		330U		330U		330U	
4,6-Dinitro-2-Methylphenol		800U		1600U		800U		4000U		800U		800U		800U	

U - Indicates compound analyzed for but not detected.
BH - Borehole

INT - Interval

Appendix E
Summary of Semivolatile Organic Compounds Detected in Soil Samples at AOC-A
220th EIS, Zanesville ANG, Zanesville, Ohio
(Results in micrograms per kilogram unless otherwise noted.)

Location No.:	A-04 BH INT 2	A-05 BH INT 1	A-05 BH INT 2	A-06 BH INT 1	A-06 BH INT 2	A-07 BH INT 1	A-07 BH INT 2
Sample Date:	6/2/94	6/2/94	6/2/94	6/2/94	6/2/94	6/2/94	6/2/94
Lab Sample No.:	9406119.02	9406119.03	9406119.04	9406119.05	9406119.06	9406119.07	9406119.08
Semivolatile Organics	Matrix	Soil	Soil	Soil	Soil	Soil	Soil
2,4-Dinitrophenol	800U	1600U	800U	4000U	800U	800U	800U
2,4-Dinitrotoluene	330U	660U	330U	1600U	330U	330U	330U
2,6-Dinitrotoluene	330U	660U	330U	1600U	330U	330U	330U
1,2-Diphenylhydrazine	330U	660U	330U	1600U	330U	330U	330U
bis(2-Ethylhexyl)Phthalate	330U	660U	330U	1600U	330U	330U	330U
Fluoranthene	330U	2000	330U	4000	330U	330U	330U
Fluorene	330U	660U	330U	1600U	330U	330U	330U
Hexachlorobenzene	330U	660U	330U	1600U	330U	330U	330U
Hexachlorobutadiene	330U	660U	330U	1600U	330U	330U	330U
Hexachloroethane	330U	660U	330U	1600U	330U	330U	330U
Hexachlorocyclopentadiene	330U	660U	330U	1600U	330U	330U	330U
Indeno(1,2,3-cd)Pyrene	330U	660U	330U	1600U	330U	330U	330U
Isophorone	330U	660U	330U	1600U	330U	330U	330U
2-Methylnaphthalene	330U	660U	330U	1600U	330U	330U	330U
2-Methylphenol	330U	660U	330U	1600U	330U	330U	330U
4-Methylphenol	330U	660U	330U	1600U	330U	330U	330U
Naphthalene	330U	660U	330U	1600U	330U	330U	330U
2-Nitroaniline	800U	1600U	800U	4000U	800U	800U	800U
3-Nitroaniline	800U	1600U	800U	4000U	800U	800U	800U
4-Nitroaniline	800U	1600U	800U	4000U	800U	800U	800U
Nitrobenzene	330U	660U	330U	1600U	330U	330U	330U
2-Nitrophenol	330U	660U	330U	1600U	330U	330U	330U
4-Nitrophenol	800U	1600U	800U	4000U	800U	800U	800U
N-Nitrosodiphenylamine (1)	330U	660U	330U	1600U	330U	330U	330U
N Nitroso Di n Propylamine	330U	660U	330U	1600U	330U	330U	330U
Di n Octyl Phthalate	330U	660U	330U	1600U	330U	330U	330U
Pentachlorophenol	800U	1600U	800U	4000U	800U	800U	800U
Phenanthrene	330U	920	330U	1600U	330U	330U	330U
Phenol	330U	660U	330U	1600U	330U	330U	330U
Pyrene	330U	720	330U	2600	330U	330U	330U
Pyridine	330U	660U	330U	1600U	330U	330U	330U
1,2,4-Trichlorobenzene	330U	660U	330U	1600U	330U	330U	330U
2,4,5-Trichlorophenol	800U	1600U	800U	4000U	800U	800U	800U
2,4,6-Trichlorophenol	330U	660U	330U	1600U	330U	330U	330U

U - Indicates compound analyzed for but not detected.
BH - Borehole

INT - Interval

Appendix E

Summary of Metal/TPH Analytes Detected in Soil Samples

220th EIS, Zanesville ANG, Zanesville, Ohio

(Results in milligrams per kilogram unless otherwise noted.)

Location No.:		A-01 BH INT 1	A-01 BH INT 2	A-02 BH INT 1	A-02 BH INT 2	A-03 BH INT 1	A-03 BH INT 2	A-04 BH INT 1
Sample Date:		6/2/94	6/2/94	6/2/94	6/2/94	6/2/94	6/2/94	6/2/94
Lab Sample No.:		9406119.11	9406119.12	9406119.13	9406119.14	9406119.09	9406119.10	9406119.01
Metals	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Silver, Total		0.6U	0.6U	0.6U	0.6U	0.6U	0.6U	0.6U
Arsenic, Total		16	2	2	0.2	4	12	9
Beryllium, Total		0.6	0.6	0.8	1	0.8	1	0.6
Cadmium, Total		1.2	0.03	0.17	0.04	0.04	0.04	2.6
Chromium, Total		7	7	5	1	9	16	5
Copper, Total		24	12	25	22	28	35	27
Mercury, Total		0.02U	0.02U	0.02U	0.02U	0.02U	0.02U	0.02U
Nickel, Total		14	4	10	13	12	14	10
Lead, Total		15	5.7	10	10	9	10	16
Antimony, Total		3U	3U	3U	5.7	3U	3U	3U
Selenium, Total		0.2U	0.2U	0.2U	0.2	0.2U	0.2U	0.4
Thallium, Total		0.4U	0.4U	0.4U	0.4U	0.4U	0.4U	0.4U
Zinc, Total		57	24	50	43	55	57	96

Lab Sample ID No.:		9406119.11		9406119.12		9406119.13		9406119.14		9406119.09		9406119.10		9406119.01	
Total Petroleum		17		4.4		71		4U		4U		4U		1600	
Hydrocarbons-Diesel															

U - Indicates compound analyzed for but not detected.

BH - Borehole

B - Indicates analyte found in the associated blank as well as in the sample.
INT - Interval

Appendix E
Summary of Metal/TPH Analytes Detected in Soil Samples
220th EIS, Zanesville ANG, Zanesville, Ohio
(Results in milligrams per kilogram unless otherwise noted.)

Location No.:		A-04 BH INT 2		A-05 BH INT 1		A-05 BH INT 2		A-06 BH INT 1		A-06 BH INT 2		A-07 BH INT 1		A-07 BH INT 2	
Sample Date:		6/2/94		6/2/94		6/2/94		6/2/94		6/2/94		6/2/94		6/2/94	
Lab Sample No.:		9406119.02		9406119.03		9406119.04		9406119.05		9406119.06		9406119.07		9406119.08	
Metals	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Silver, Total		0.6U		0.6U		0.6U		0.6U		0.6U		0.6U		0.6U	
Arsenic, Total		6	15	5U		6		2		8		9			
Beryllium, Total		0.8	0.6	1.2		0.7		0.1U		0.7		0.9			
Cadmium, Total		0.03	0.75	0.02		0.9		0.01		0.19		0.08			
Chromium, Total		8	30	10		10		2.3		8		9			
Copper, Total		15	20	13		22		6		17		22			
Mercury, Total		0.02U		0.02U		0.02U		0.02U		0.02U		0.02U			
Nickel, Total		10	8	10		17		1U		13		16			
Lead, Total		10	23	9.4		16		4.9		8.4		11			
Antimony, Total		3U	4.4	3.3		3U		3U		3U		3U			
Selenium, Total		0.2U	0.6	0.2U		0.2U		0.2U		0.2U		0.2U			
Thallium, Total		0.4U	0.4U	0.4U		0.4U		0.4U		0.4U		0.4U			
Zinc, Total		33	91	30		57		20		49		52			

Lab Sample ID No.:		9406119.02		9406119.03		9406119.04		9406119.05		9406119.06		9406119.07		9406119.08	
Total Petroleum		4U		370		4U		20		4U		23		4U	
Hydrocarbons-Diesel															

U - Indicates compound analyzed for but not detected.
BH - Borehole

B - Indicates analyte found in the associated blank as well as in the sample.
INT - Interval

Appendix E
Summary of Metal Analytes Detected in Soil Samples at AOC-A
220th EIS, Zanesville ANG, Zanesville, Ohio
 (Results in milligrams per kilogram unless otherwise noted.)

Location No.:	B-001 BH INT 1		B-001 BH INT 2		B-002 BH INT 1		B-002 BH INT 2		B-003 BH INT 1		B-003 BH INT 2	
	Sample Date:		6/3/94		6/3/94		6/3/94		6/3/94		6/3/94	
Lab Sample No.:	9406170.05		9406170.06		9406170.03		9406170.04		9406170.01		9406170.02	
Matrix	Soil		Soil		Soil		Soil		Soil		Soil	
Metals	43		42		5.3		6.2		7.9		4.9	
Lead, Total												

U - Indicates Compound Analyzed For But Not Detected.

BH - Borehole

INT - Interval



SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: 94.06.119

Approved for release by:

S. Sample
S. Sample, Laboratory Director

Date: 6/22/94

Karen Satterfield
Karen Satterfield, Project Manager

Date: 6/27/94



CASE NARRATIVE

WORK ORDER No.: 9406119

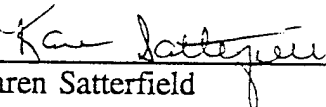
Southern Petroleum Laboratories (SPL) is pleased to present the results for laboratory analyses to Operational Technologies. The fourteen (14) soil samples were received at our laboratory on June 03, 1994 at a temperature of 3 degrees Celsius. The following is a brief narrative of the laboratory analysis.

The samples were analyzed for volatiles, semi-volatiles, metals, and TPH (diesel). All results are reported on an as received basis. There were no deviations from the methods.

Soil sample "A-05 BH Int.1" was analyzed for semi-volatile organics by SW-846 method 8270. Due to matrix interferences, the internal standard areas for Chrysene-d12 and Perylene-d12 were above the maximum QC control limits. Upon reanalysis of the extract at a higher dilution, the internal standard area of Perylene-d12 failed again. Therefore, the internal standard failed due to matrix interferences. Soil sample "A-04 BH Int.1" was analyzed for semi-volatiles at a 5x dilution due to hydrocarbon interferences. Soil sample "A-06 BH Int.1" was analyzed for semi-volatiles at a 5x dilution due to hydrocarbon interferences.

All of the quality control data was within limits for this project except for acetone detected in the method blank. This is indicated by the letter "B" on the result pages. Acetone is a common laboratory contaminant.

If I can be of further assistance or answer any questions, please do not hesitate to contact me at (713) 660-0901 ext. 114.



Karen Satterfield
Project Manager



Certificate of Analysis No. 9406119-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:20:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-11

Operational Tech

SAMPLE ID: A-01 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS	
	RESULTS	PQL*		
ANALYZED BY: HLW				
DATE/TIME: 06/14/94 12:36:00				
METHOD: 8240, Volatile Organics - Soil				
NOTES:	* - Practical Quantitation Limit	ND - Not Detected		
	NA - Not Analyzed	D - Surr. diluted out.		

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Data File: /chem/k.i/k061494.b/k165s01.d
Report Date: 15-Jun-1994 11:12

Page 1

SPL Labs

Data file : /chem/k.i/k061494.b/k165s01.d

Lab. Id. :

Quant Type: ISTD

Inj Date : 14-JUN-1994 12:36

Autotune Date: {

Operator :

Inst ID: k.i

Smp Info : 9406119-8240S-11A X1

Misc Info :

Comment :

Method : /chem/k.i/k061494.b/kclps.m

Meth Date : 14-Jun-1994 17:20 hillery

Cal Date : 14-JUN-1994 10:26

Cal File: k165cc1.d

Als bottle: 7

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	REL RT	RESPONSE	ON-COLUMN	FINAL
						(ng)	(ug/Kg)
=====	====	==	=====	=====	=====	=====	
* 1 Bromochloromethane	129.00	2.520	(1.000)	58786	50	(Q)	
\$ 16 1,2-Dichloroethane-d4	65.00	2.923	(1.120)	182756	47	47	
* 18 1,4-Difluorobenzene	114.00	3.323	(1.000)	424886	50		
* 33 Chlorobenzene-d5	117.00	7.429	(1.000)	346956	50		
\$ 38 Toluene-d8	98.00	5.232	(0.704)	462998	51	51	
\$ 42 Bromofluorobenzene	95.00	9.505	(1.279)	198483	50	50	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: /chem/k.i/k061494.b/k165s01.d
Report Date: 15-Jun-1994 11:12

Page 2

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k061494.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	47	94.47	70-121
\$ 38 Toluene-d8	50	51	101.82	84-138
\$ 42 Bromofluorobenzene	50	50	99.96	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k165s01.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

Calibration Date: 06/14/94
Calibration Time: 1026
Sample Type: SOIL
Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	65375	32687	130750	68786	5.22
18 1,4-Difluorobenzene	393488	196744	786976	424886	7.98
33 Chlorobenzene-d5	337452	168726	674904	346956	2.82

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	2.52	2.02	3.02	2.52	-0.02
18 1,4-Difluorobenzene	3.32	2.82	3.82	3.32	-0.01
33 Chlorobenzene-d5	7.41	6.91	7.91	7.43	0.20

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT.

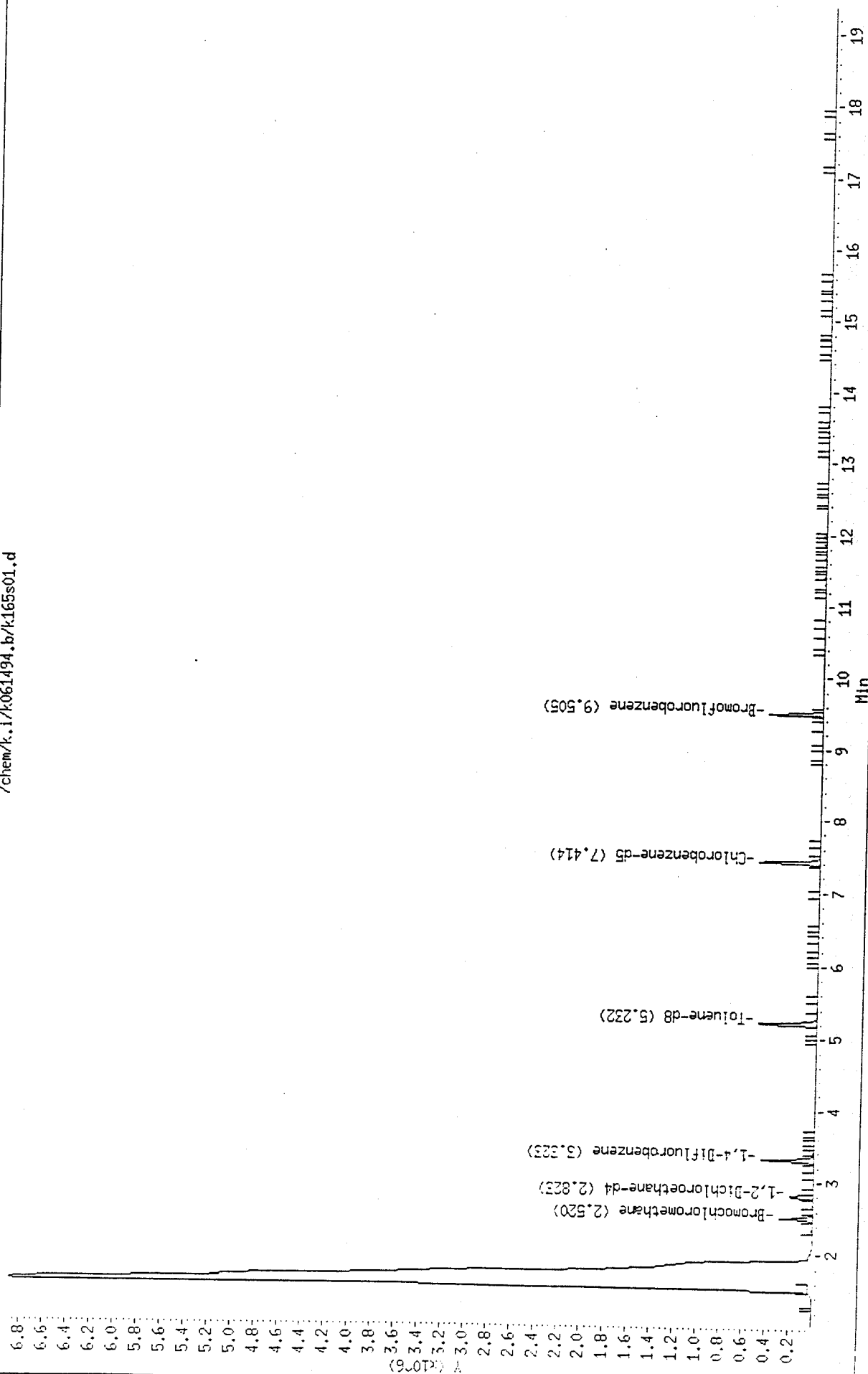
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k061494.b/k165s01.d
Date : 14-JUN-1994 12:36
Instrument : k.i
Sample ID :
Column phase :
Volume Injected (uL) : 0.0

Page 4

Column diameter : 0.25

/chem/k.i/k061494.b/k165s01.d





Certificate of Analysis No. 9406119-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:28:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-12

Operational Tech

SAMPLE ID: A-01 BH Int.2

PARAMETER	ANALYTICAL DATA (continued)		UNITS	
	RESULTS	PQL*		
ANALYZED BY: HLW				
DATE/TIME: 06/14/94 13:50:00				
METHOD: 8240, Volatile Organics - Soil				
NOTES:	* - Practical Quantitation Limit	ND - Not Detected		
	NA - Not Analyzed	D - Surr. diluted out.		

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k061494.b/k165s02.d
Lab. Id. : Quant Type: ISTD
Inj Date : 14-JUN-1994 13:50 Autotune Date: {
Operator : Inst ID: k.i
Smp Info : 9406119-8240S-12A K1
Misc Info :
Comment :
Method : /chem/k.i/k061494.b/kclps.m
Meth Date : 14-Jun-1994 17:20 hillery
Cal Date : 14-JUN-1994 10:26 Cal File: k165cc1.d
Als bottle: 10
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		ON-COLUMN	FINAL			
	MASS	RT	REL RT	RESPONSE	(ng)	(ug/Kg)
-----	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.522	(1.000)	69809	50	(Q)
S 16 1,2-Dichloroethane-d4	65.00	2.910	(1.114)	184537	47	47
* 18 1,4-Difluorobenzene	114.00	3.325	(1.000)	422473	50	
* 33 Chlorobenzene-d5	117.00	7.416	(1.000)	354875	50	
S 38 Toluene-d8	98.00	5.219	(0.704)	465773	50	50
S 42 Bromofluorobenzene	95.00	9.492	(1.280)	201565	50	50

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k061494.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	47	93.99	70-121
\$ 38 Toluene-d8	50	50	100.15	84-138
\$ 42 Bromofluorobenzene	50	50	99.25	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k165s02.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

Calibration Date: 06/14/94
Calibration Time: 1026
Sample Type: SOIL
Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
=====	=====	=====	=====	=====	=====
1 Bromochloromethane	65375	32687	130750	69809	6.78
18 1,4-Difluorobenzene	393488	196744	786976	422478	7.37
33 Chlorobenzene-d5	337452	168726	674904	354876	5.16

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
=====	=====	=====	=====	=====	=====
1 Bromochloromethane	2.52	2.02	3.02	2.52	0.06
18 1,4-Difluorobenzene	3.32	2.82	3.82	3.32	0.04
33 Chlorobenzene-d5	7.41	6.91	7.91	7.42	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k061494.b/k165s02.d

Date : 14-JUN-1994 13:50

Instrument : k.i

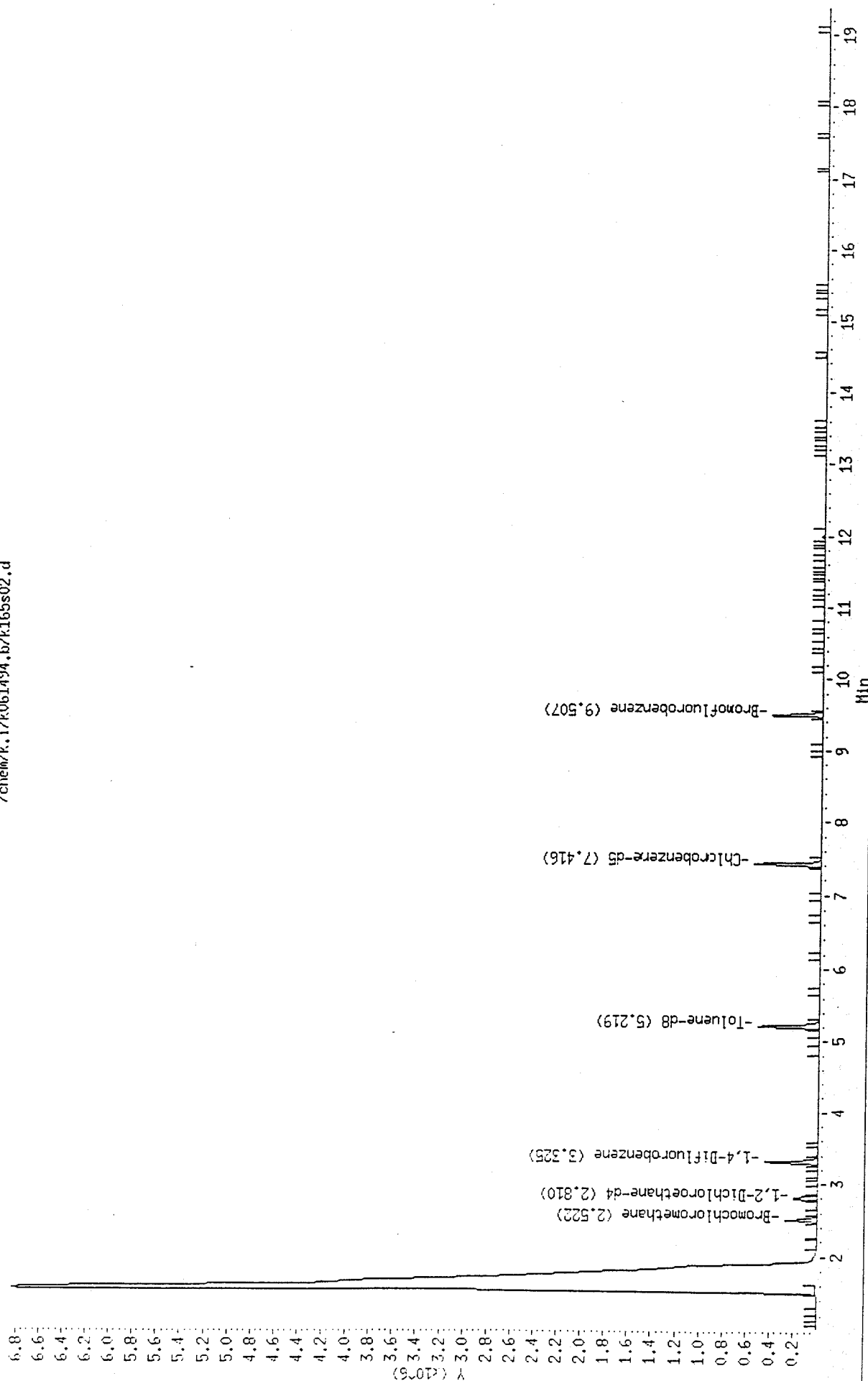
Sample ID :

Column phase :

Volume Injected (uL) : 0.0

Column diameter : 0.25

/chem/k.i/k061494.b/k165s02.d





Certificate of Analysis No. 9406119-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:55:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k165s04.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

Calibration Date: 06/14/94
Calibration Time: 1026
Sample Type: SOIL
Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	65375	32687	130750	74257	13.59
18 1,4-Difluorobenzene	393488	196744	786976	447808	13.80
33 Chlorobenzene-d5	337452	168726	674904	370777	9.88

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.52	0.03
18 1,4-Difluorobenzene	3.32	2.82	3.82	3.32	0.02
33 Chlorobenzene-d5	7.41	6.91	7.91	7.43	0.21

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k061494.b/k165s04.d

Date: 14-JUL-1994 14:39

Instrument: k.i

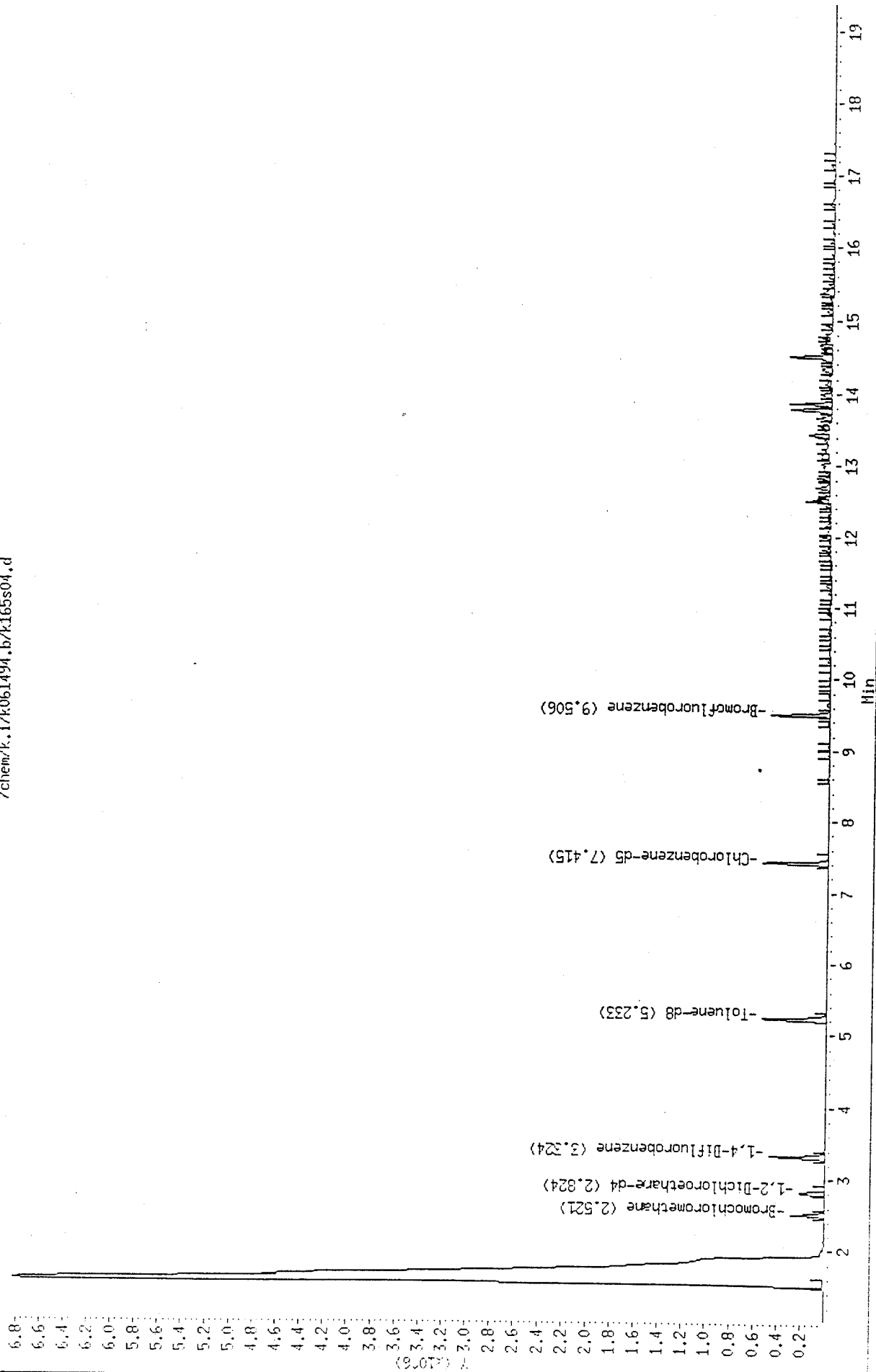
Sample ID:

Column phase:

Volume Injected (ul): 0.0

Column diameter: 0.25

/chem/k.i/k061494.b/k165s04.d



Date : 14-JUN-1994 14:39

Instrument : k.i

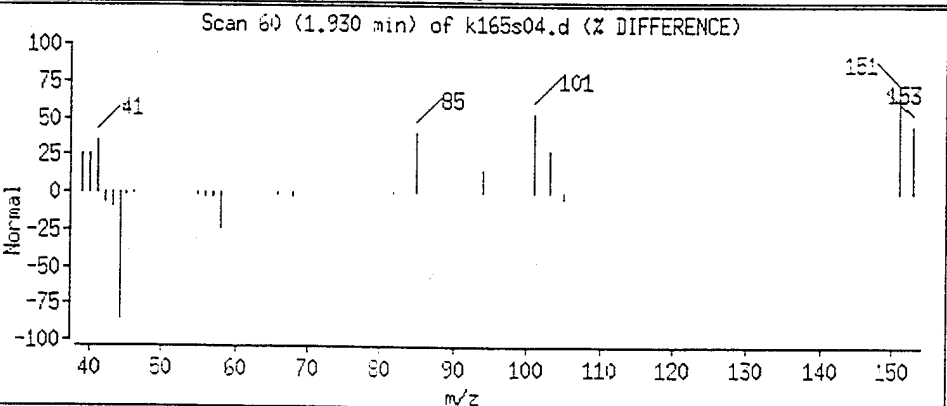
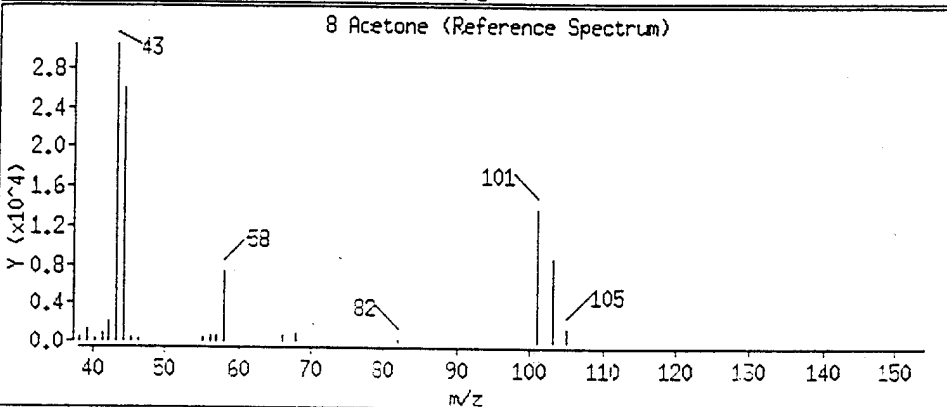
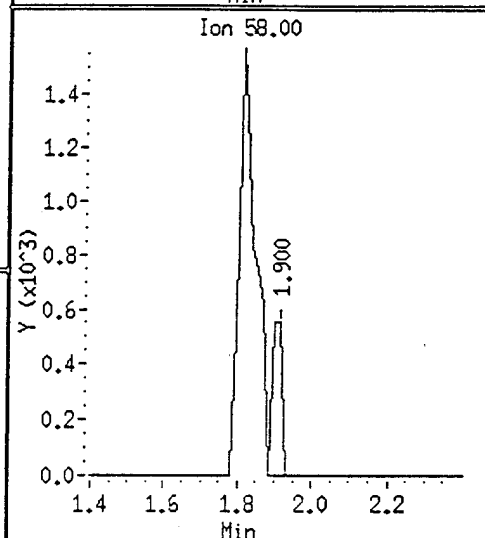
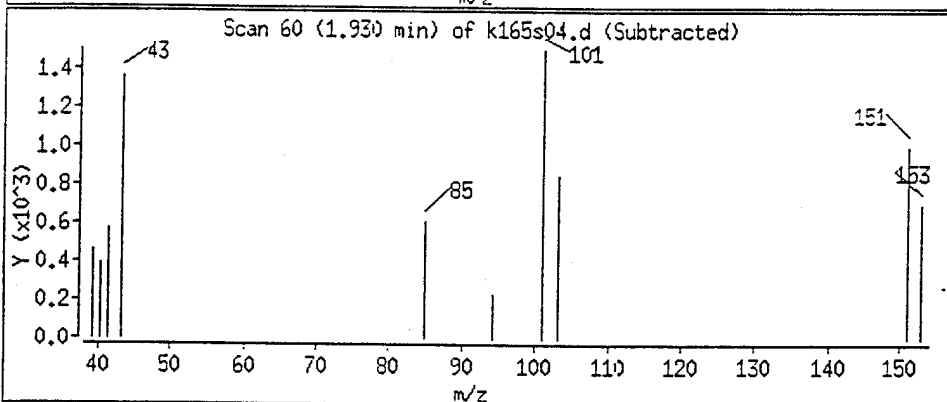
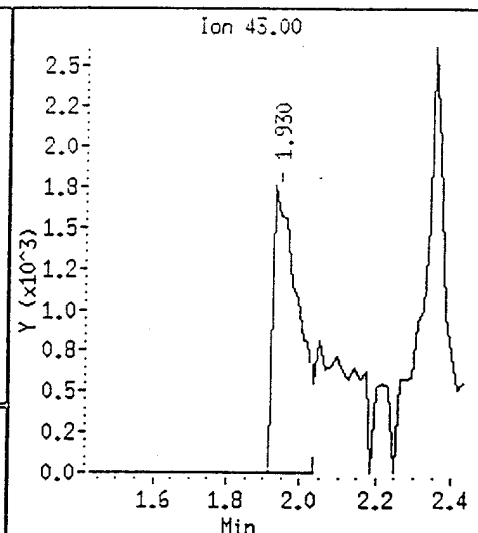
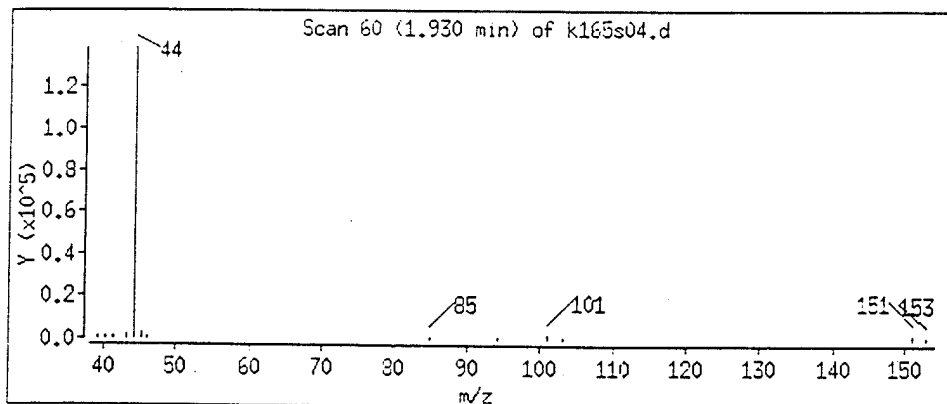
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

8 Acetone



Data File: /chem/k.i/k060894.b/k159bf2.d

Page 1

Date : 08-JUN-94 12:49

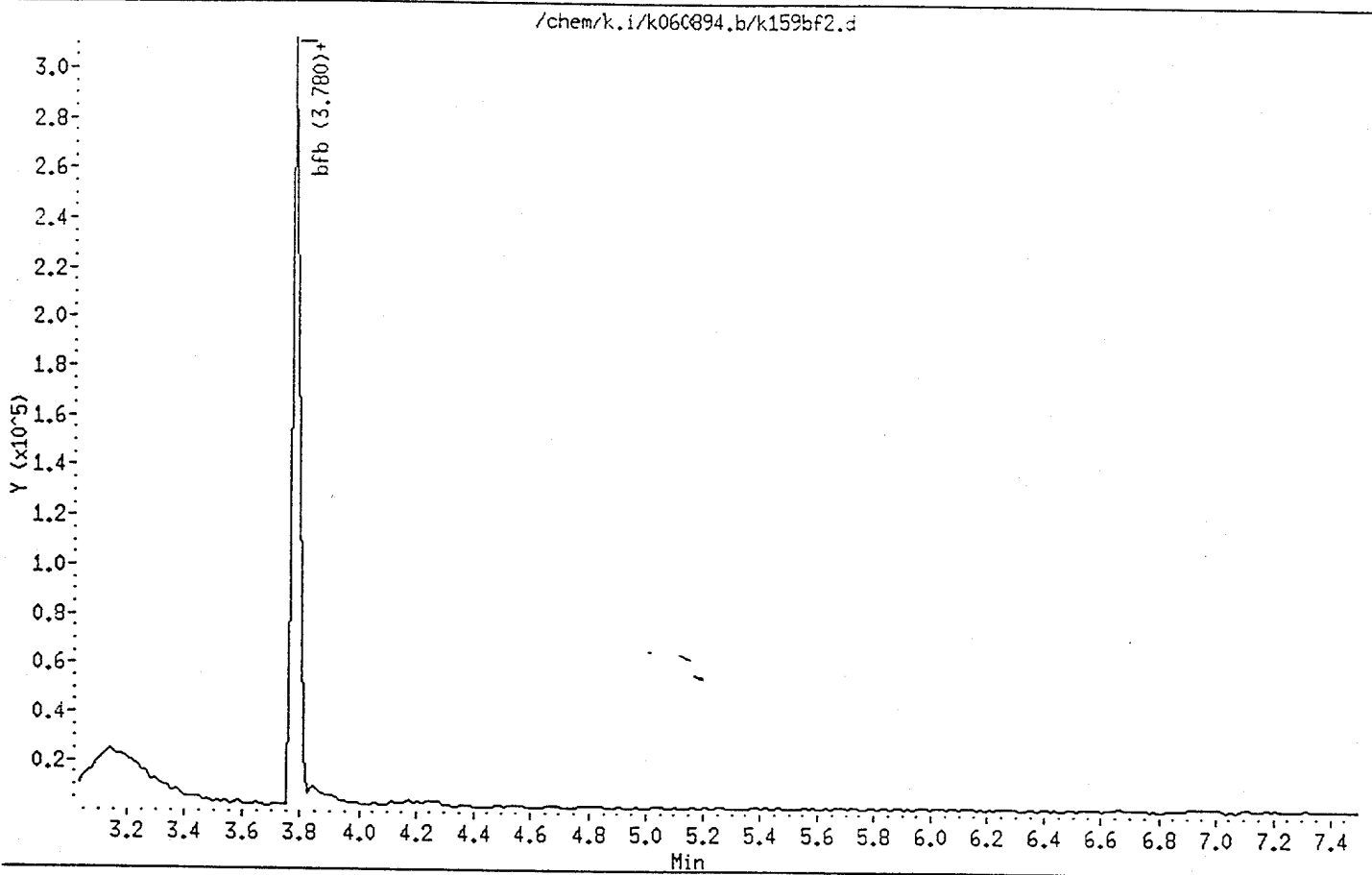
Instrument : k.i

Sample ID :

Column phase :

Column diameter : 2.00

Volume Injected (uL) : 0.0





Certificate of Analysis No. 9406119-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:50:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 34	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-09

Operational Tech

SAMPLE ID: A-03 BH Int.1

PARAMETER	ANALYTICAL DATA (continued) RESULTS	PQL*	UNITS
ANALYZED BY: HLW	DATE/TIME: 06/08/94 00:22:00		
METHOD: 8240, Volatile Organics - Soil			
NOTES: * - Practical Quantitation Limit	ND - Not Detected		
NA - Not Analyzed			
B = Compound present in Method Blank	D - Surr. diluted out.		
COMMENTS:			

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k060894.b/k159s10.d
Lab. Id. : Quant Type: ISTD
Inj Date : 09-JUN-1994 00:22 Autotune Date: {
Operator : Inst ID: k.i
Smp Info : 9406119-8240S-09A X1
Misc Info :
Comment :
Method : /chem/k.i/k060894.b/kclps.m
Meth Date : 09-Jun-1994 11:53 hillery
Cal Date : 08-JUN-1994 16:01 Cal File: k159cc3.d
Als bottle: 27
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		ON-COLUMN	FINAL			
	MASS	RT	REL RT	RESPONSE	(ng)	(ug/Kg)
-----	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.520	(1.000)	43400	50	(Q)
8 Acetone	43.00	1.808	(0.717)	24672	34	34 <i>How</i>
\$ 16 1,2-Dichloroethane-d4	65.00	2.823	(1.120)	112036	46	46
* 18 1,4-Difluorobenzene	114.00	3.338	(1.000)	379078	50	
* 33 Chlorobenzene-d5	117.00	7.445	(1.000)	269421	50	
\$ 38 Toluene-d8	98.00	5.248	(0.705)	402745	56	56
\$ 42 Bromofluorobenzene	95.00	9.521	(1.279)	140043	46	46

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: /chem/k.i/k060894.b/k139s10.d
Report Date: 09-Jun-1994 11:54

Page 2

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kc1ps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	46	93.16	70-121
\$ 38 Toluene-d8	50	56	112.16	84-138
\$ 42 Bromofluorobenzene	50	46	92.71	59-113

* - Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159s10.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD

Calibration Date: 06/08/94
Calibration Time: 1601
Sample Type: SOIL
Level: LOW

Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	62390	31195	124780	43400	-30.44
18 1,4-Difluorobenzene	436788	218394	873576	379078	-13.21
33 Chlorobenzene-d5	349737	174868	699474	269421	-22.96

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.52	-0.02
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	-0.01
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	-0.01

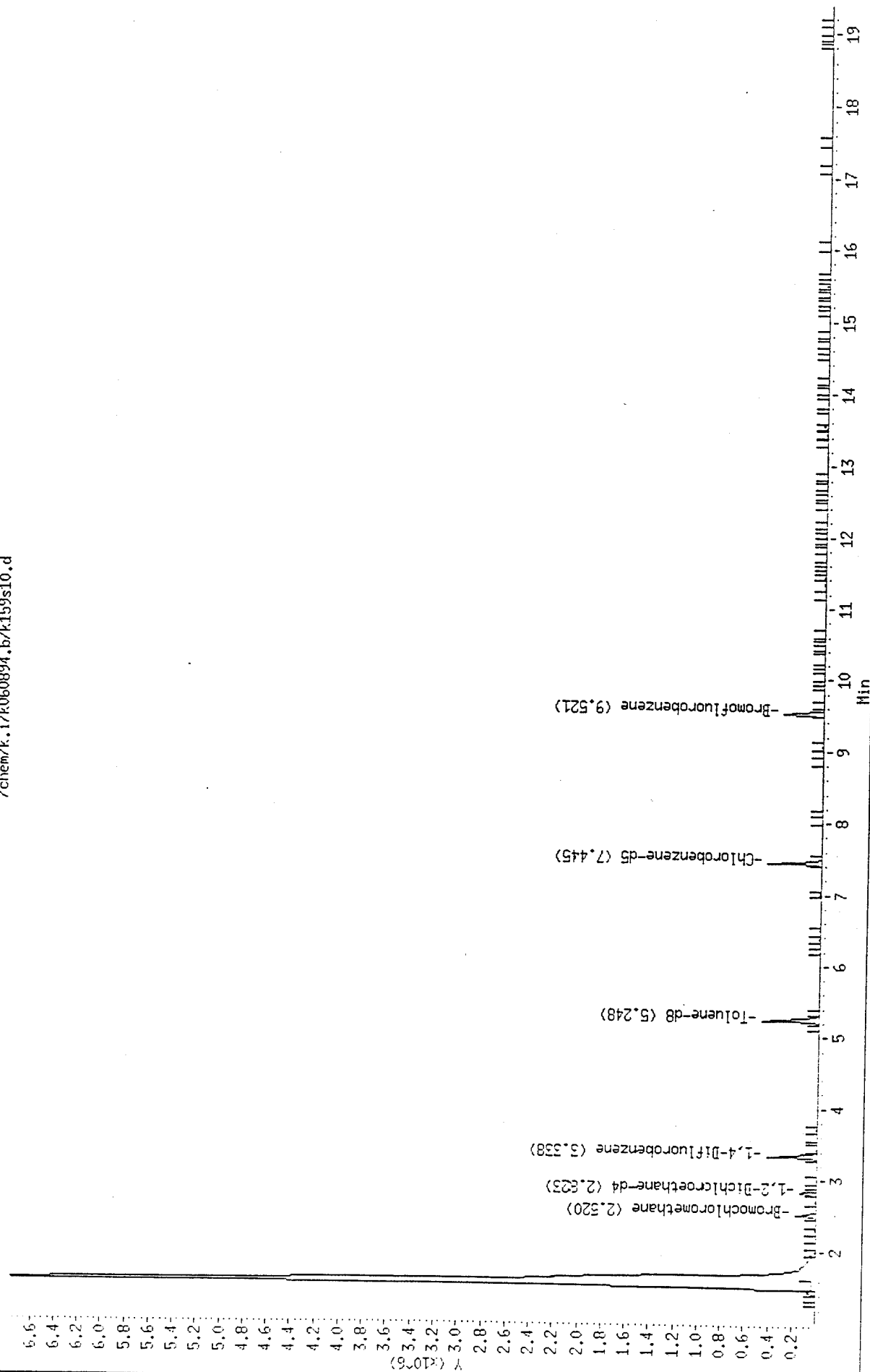
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159s10.d
Date : 09-JUN-1994 00:22
Instrument : k.i
Sample ID :
Column phase :
Volume Injected (uL) : 0.0

Page 4

Column diameter : 0.25

/chem/k.i/k060894.b/k159s10.d



Date : 09-JUN-1994 00:22

Instrument : K.1

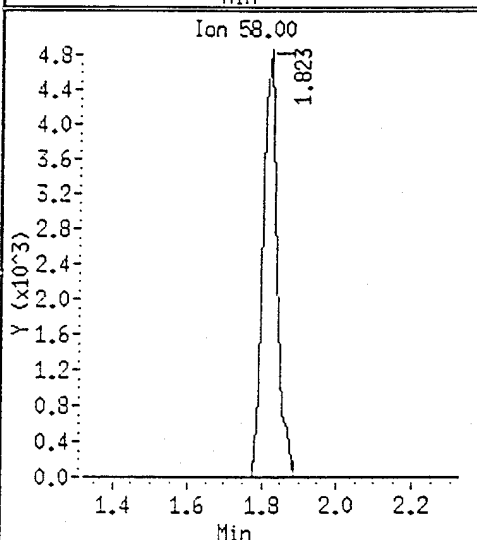
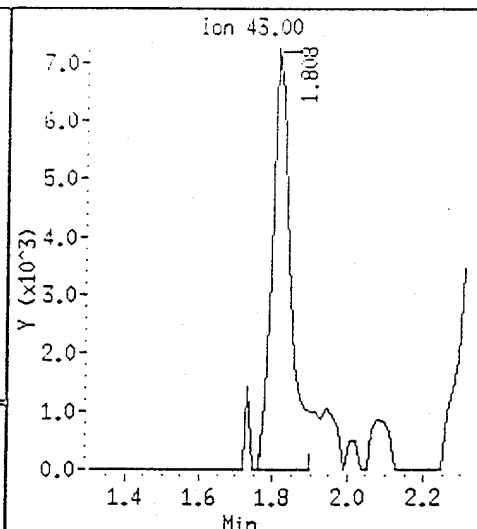
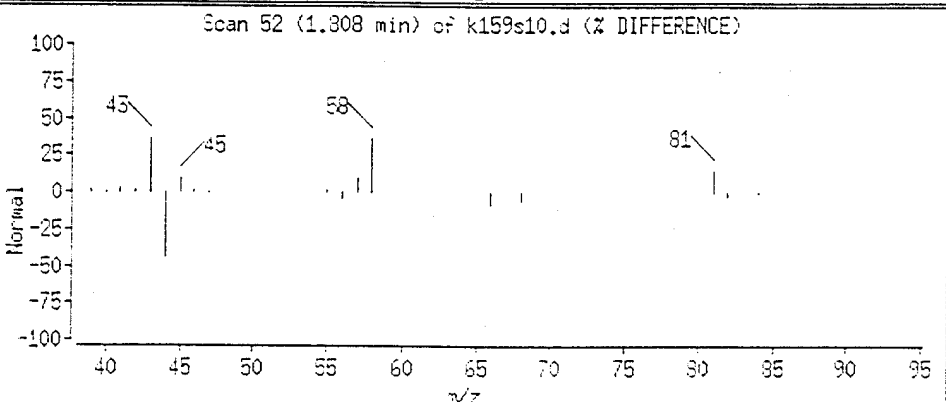
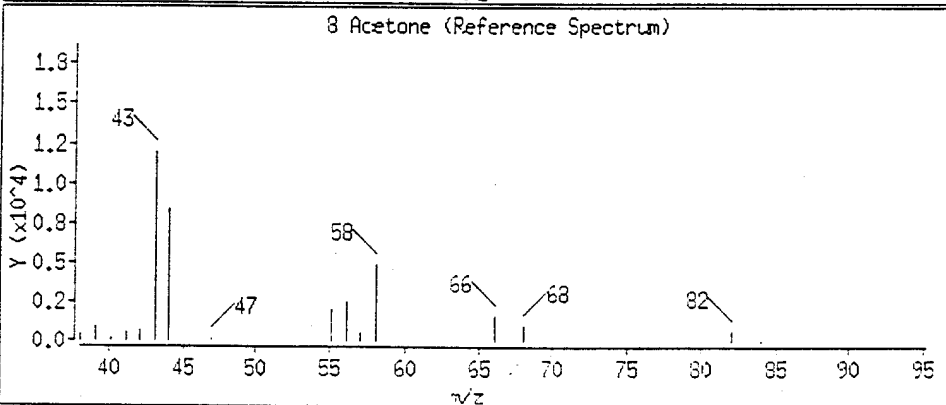
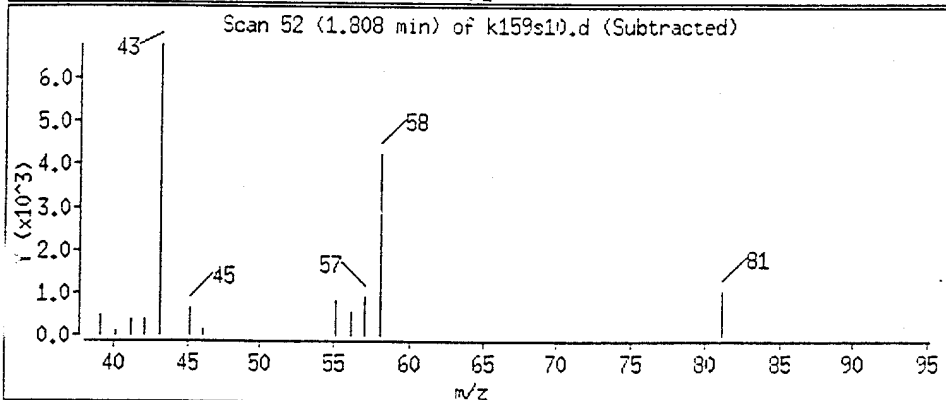
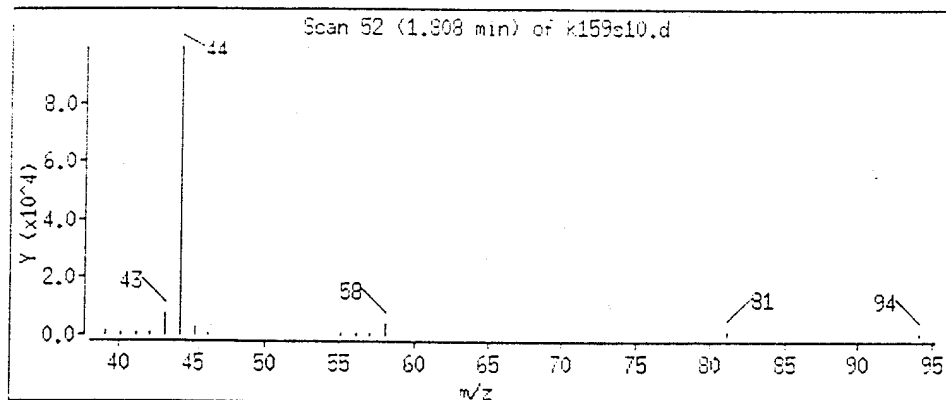
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

8 Acetone





Certificate of Analysis No. 9406119-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:55:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 51	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-10

Operational Tech

SAMPLE ID: A-03 BH Int.2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
ANALYZED BY: HLW			
DATE/TIME: 06/08/94 00:46:00			
METHOD: 8240, Volatile Organics - Soil			
NOTES: * - Practical Quantitation Limit			
ND - Not Detected			
NA - Not Analyzed			
B = Compound present in Method Blank			
D - Surr. diluted out.			
COMMENTS:			

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k060894.b/k159s11.d
Lab. Id. :
Inj Date : 09-JUN-1994 00:46
Operator :
Smp Info : 9406119-8240S-10A X1
Misc Info :
Comment :
Method : /chem/k.i/k060894.b/kclps.m
Meth Date : 09-Jun-1994 11:53 hillery
Cal Date : 08-JUN-1994 16:01
Als bottle: 28
Dil Factor: 1.000
Integrator: HP RTE
Sample Matrix: SOIL

Quant Type: ISTD
Autotune Date: {
Inst ID: k.i
Cal File: k159cc3.d
Target Version: Target 3.00
Compound Sublist: all.sub

Compounds	QUANT SIG MASS	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ng)	FINAL (ug/Kg)
*****	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.522	(1.000)	37103	50	(C)
8 Acetone	43.00	1.810	(0.716)	31055	51	51(Q) <i>How.</i>
\$ 16 1,2-Dichloroethane-d4	65.00	2.825	(1.120)	95807	46	46
* 18 1,4-Difluorobenzene	114.00	3.341	(1.000)	368791	50	
* 33 Chlorobenzene-d5	117.00	7.447	(1.000)	258790	50	
\$ 38 Toluene-d8	93.00	5.250	(0.705)	395223	57	57
\$ 42 Bromofluorobenzene	95.00	9.523	(1.279)	132605	46	46

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kc1ps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	46	93.19	70-121
\$ 38 Toluene-d8	50	57	114.59	84-138
\$ 42 Bromofluorobenzene	50	46	91.40	59-113

* - Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159s11.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

Calibration Date: 06/08/94
Calibration Time: 1601
Sample Type: SOIL
Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	62390	31195	124780	37103	-40.53
18 1,4-Difluorobenzene	436788	218394	873576	368791	-15.57
33 Chlorobenzene-d5	349737	174868	699474	258790	-26.00

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.52	0.07
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	0.05
33 Chlorobenzene-d5	7.45	6.95	7.95	7.45	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159s11.d

Date : 09-MAR-1994 00:46

Instrument : F.I

Sample ID :

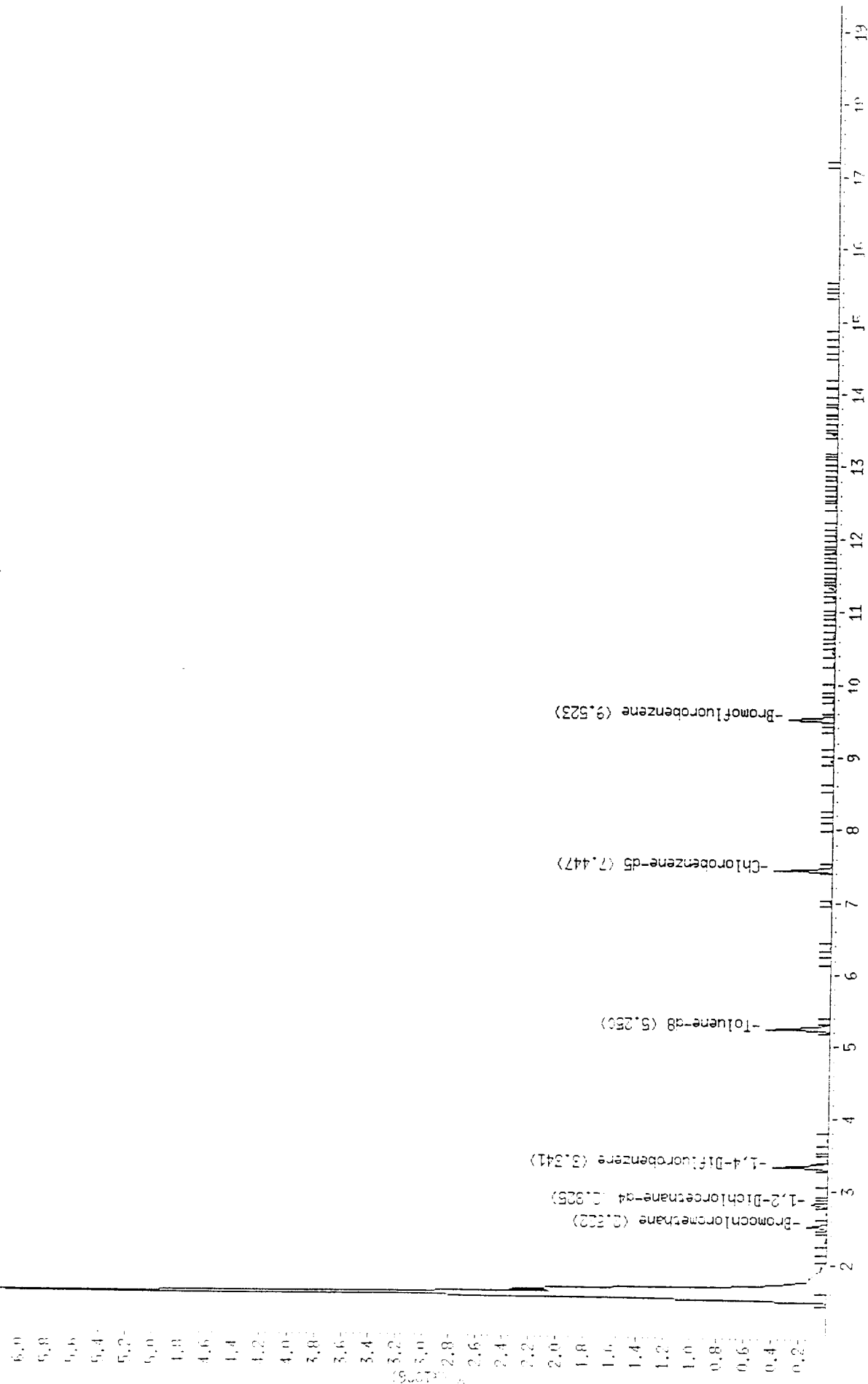
Column phase :

Volume Injected (ul) : 0.0

Page 4

Column diameter : 0.25

/chem/k.i/k060894.b/k159s11.d



Data File: chem/k11/k060894.b/k159s11.d

Page 5

Date : 09-JUN-1994 00:46

Instrument : 4.1

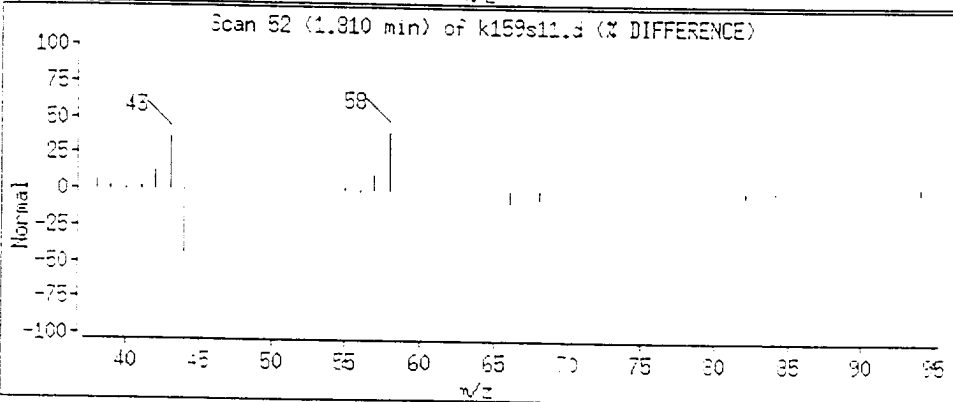
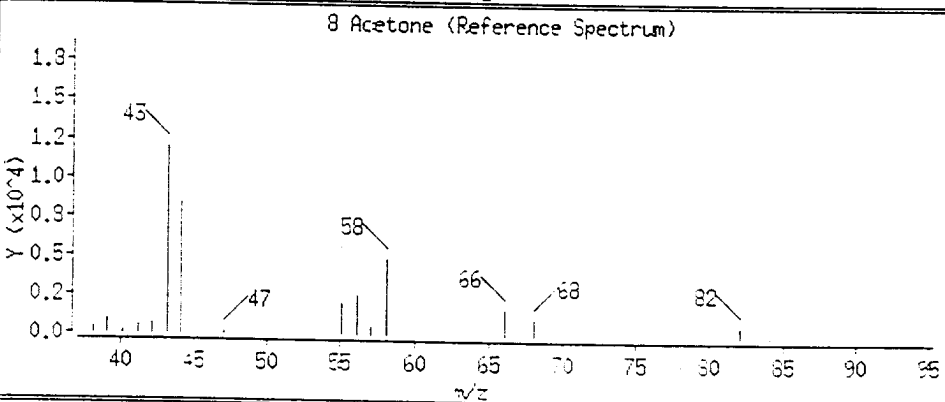
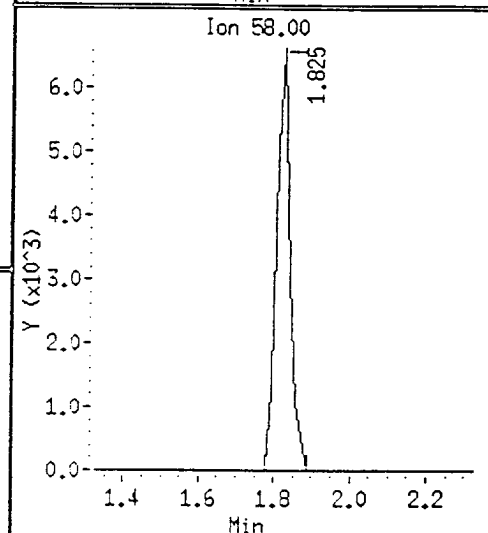
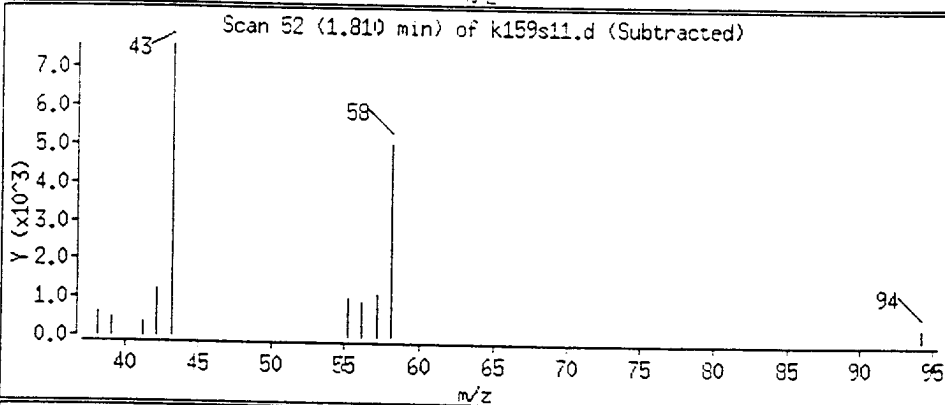
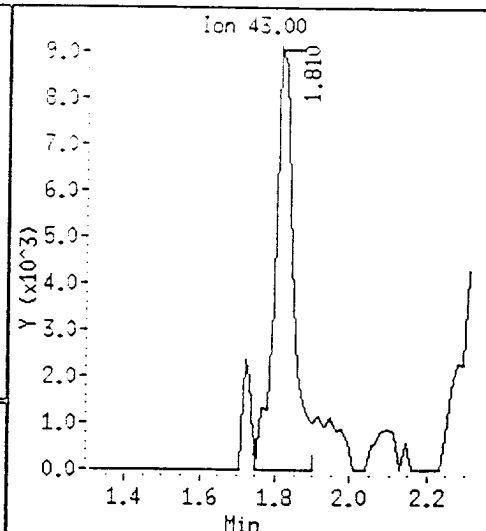
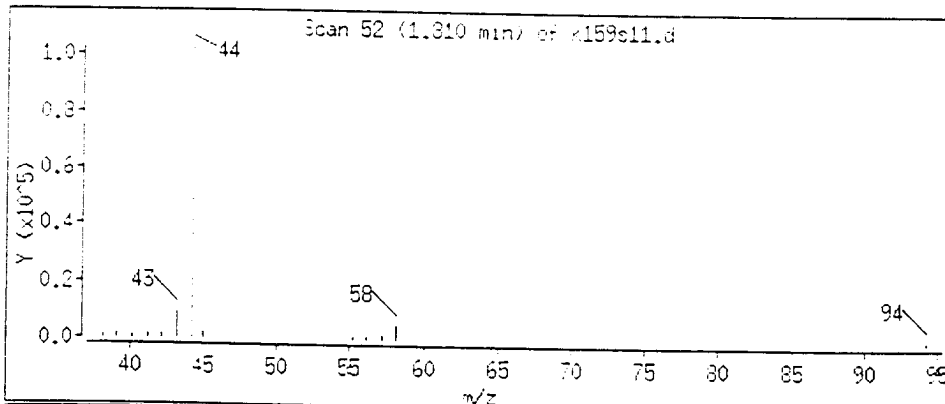
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

8 Acetone





Certificate of Analysis No. 9406119-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:20:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 46	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-01

Operational Tech

SAMPLE ID: A-04 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	

ANALYZED BY: HLW

DATE/TIME: 06/08/94 21:09:00

METHOD: 8240, Volatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

B = Compound present in Method Blank

D - Surr. diluted out.

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k060894.b/k159s02.d
Lab. Id. : Quant Type: ISTD
Inj Date : 08-JUN-1994 21:09 Autotune Date: {
Operator : Inst ID: k.i
Smp Info : 9406119-8240S-01A X1
Misc Info :
Comment :
Method : /chem/k.i/k060894.b/kclps.m
Meth Date : 27-Jun-1994 10:19 csadmin
Cal Date : 08-JUN-1994 16:01 Cal File: k159cc3.d
Als bottle: 19
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG MASS	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ng)	FINAL (ug/Kg)
*****	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.535	(1.000)	58614	50	(Q)
8 Acetone	43.00	1.808	(0.713)	44829	46	46
\$ 16 1,2-Dichloroethane-d4	65.00	2.838	(1.120)	156847	48	48
* 18 1,4-Difluorobenzene	114.00	3.353	(1.000)	391894	50	
19 2-Butanone	43.00	2.353	(0.702)	25040	18	18
* 33 Chlorobenzene-d5	117.00	7.444	(1.000)	318239	50	
\$ 38 Toluene-d8	98.00	5.262	(0.707)	433155	51	51
\$ 42 Bromofluorobenzene	95.00	9.520	(1.279)	180806	51	51

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	48	96.57	70-121
\$ 38 Toluene-d8	50	51	102.12	84-138
\$ 42 Bromofluorobenzene	50	51	101.34	59-113

* - Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159s02.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

Calibration Date: 06/08/94
Calibration Time: 1601
Sample Type: SOIL
Level: LOW

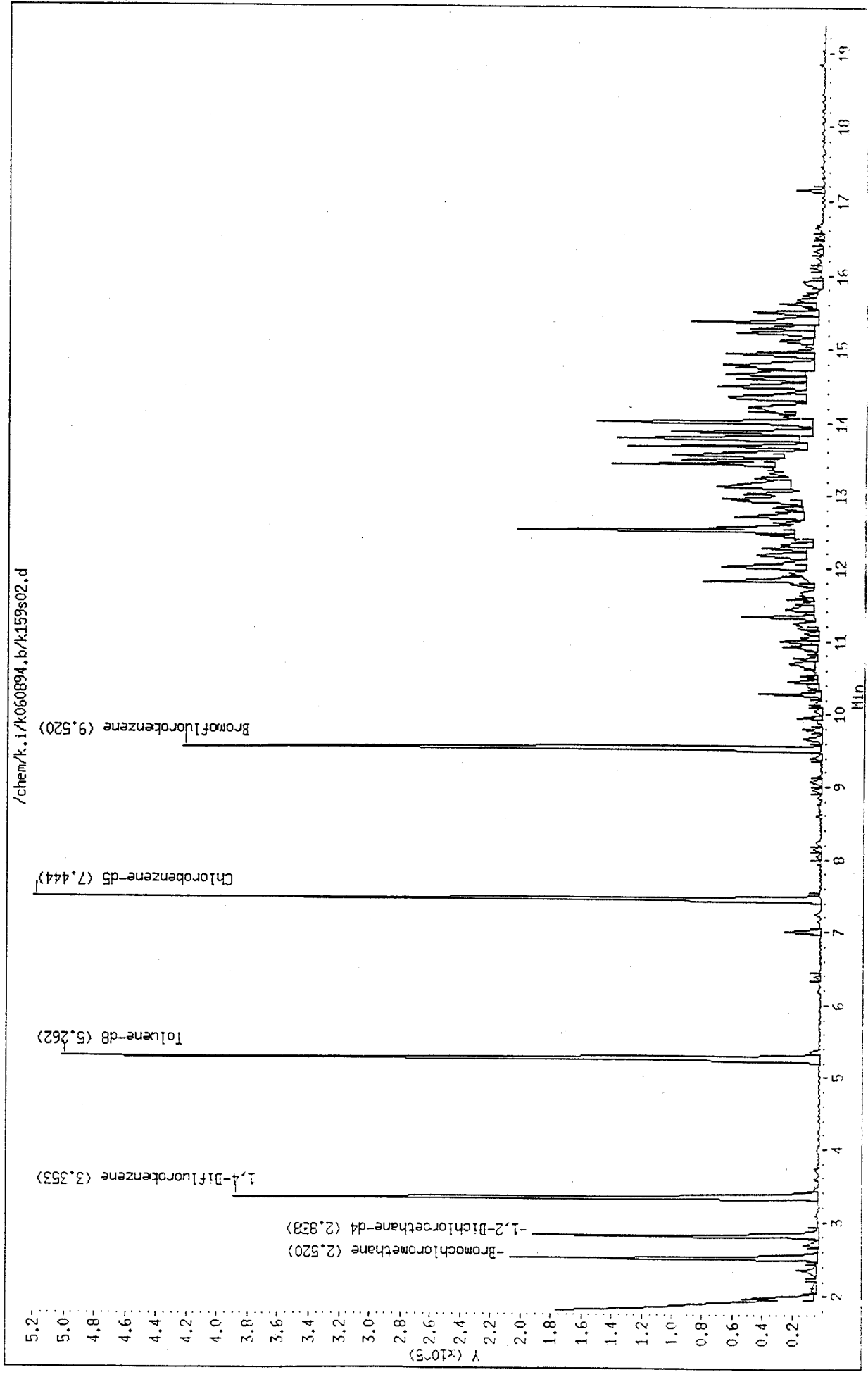
COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	62390	31195	124780	58614	-6.05
18 1,4-Difluorobenzene	436788	218394	873576	391894	-10.28
33 Chlorobenzene-d5	349737	174868	699474	318239	-9.01

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.54	0.57
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.35	0.43
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159s02.d
Date : 08-JUN-1994 21:09
Instrument : k.i
Sample ID :
Column phase :
Volume Injected (ul) : 0.0

Column diameter : 0.25



Date : 08-JUN-1994 21:09

Instrument : k.i

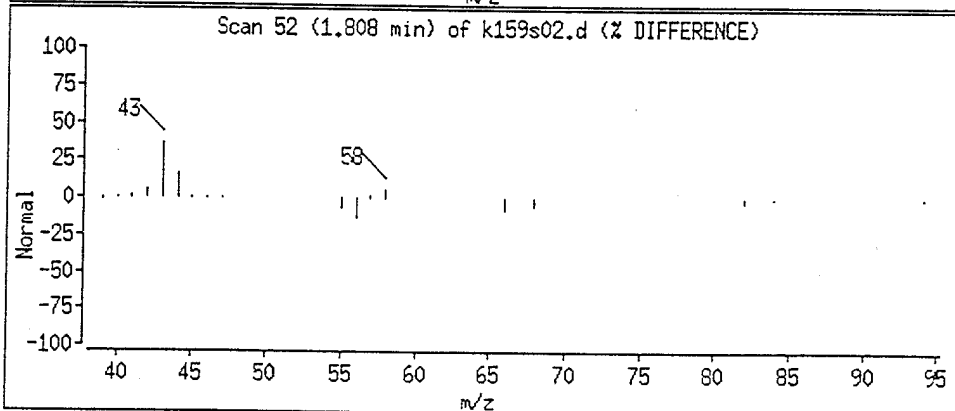
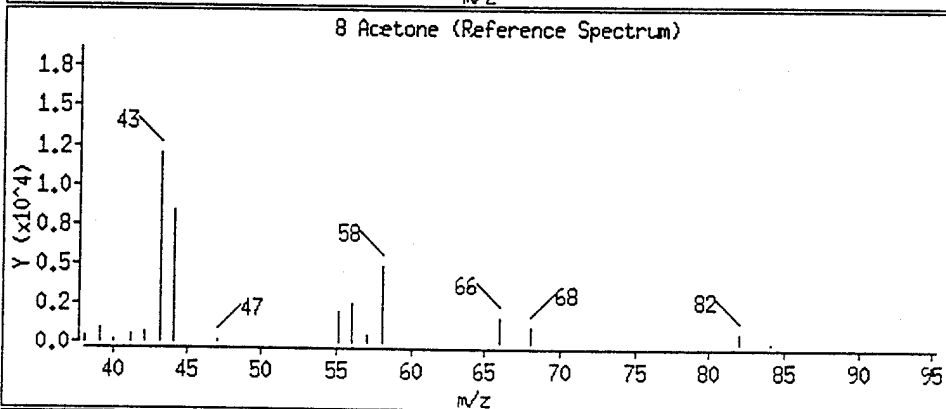
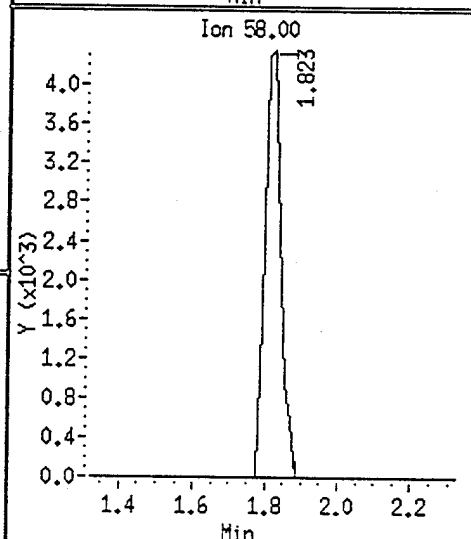
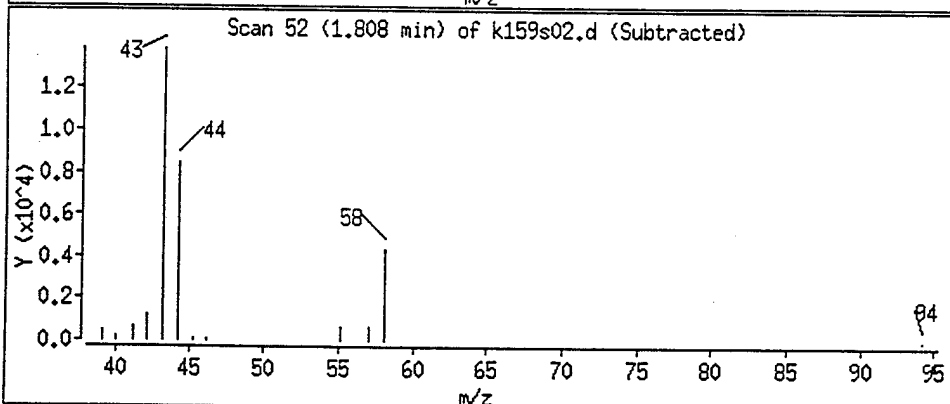
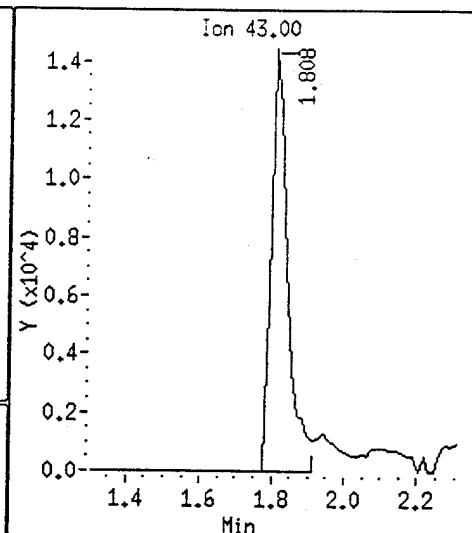
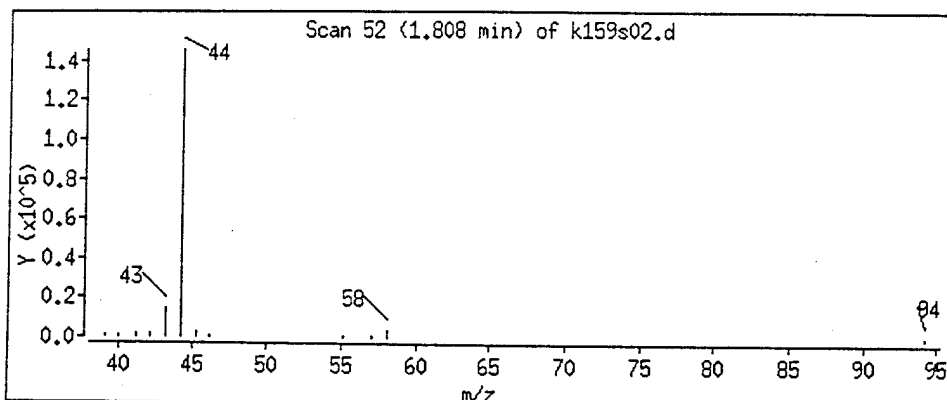
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

8 Acetone



Date : 08-JUN-1994 21:09

Instrument : k.i

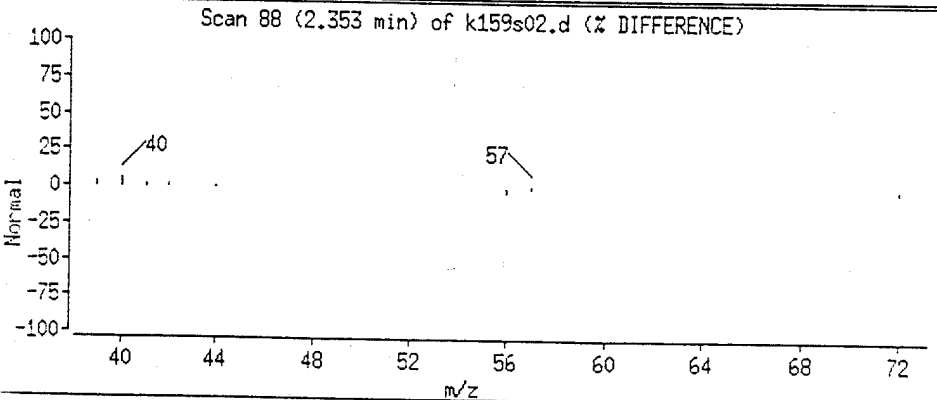
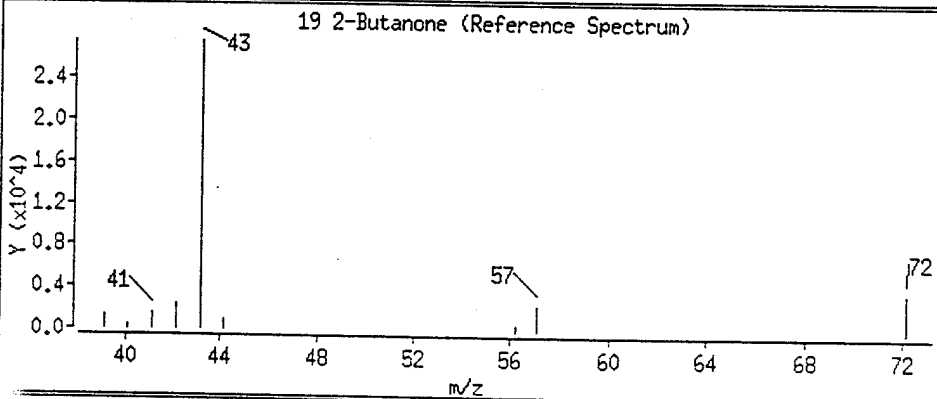
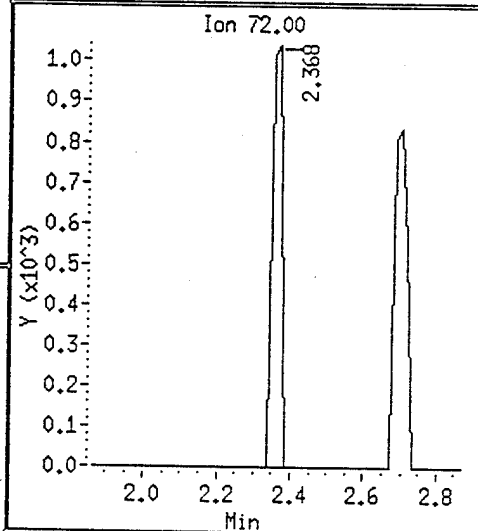
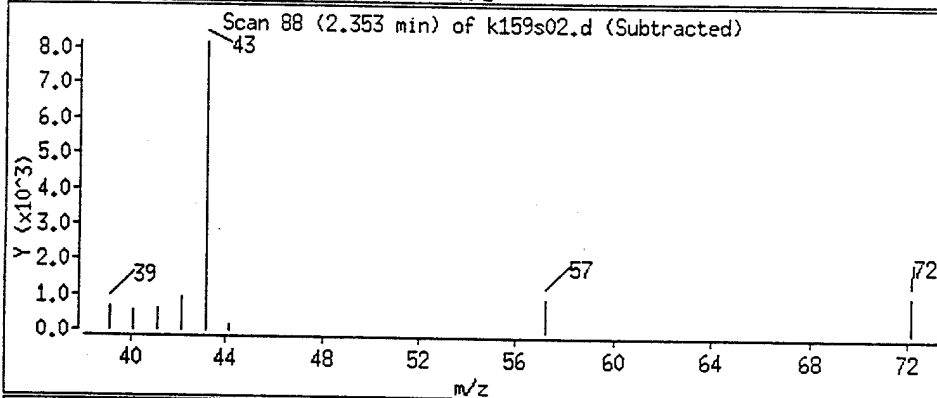
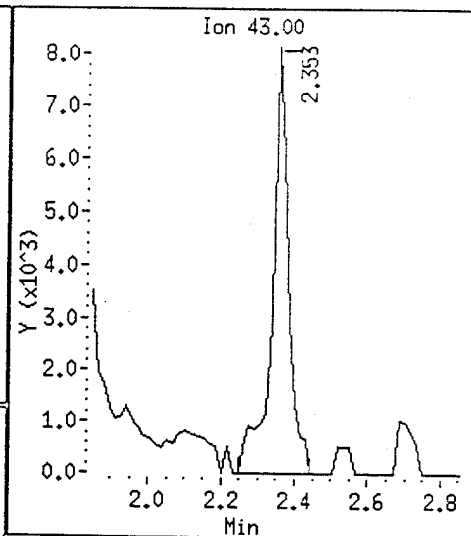
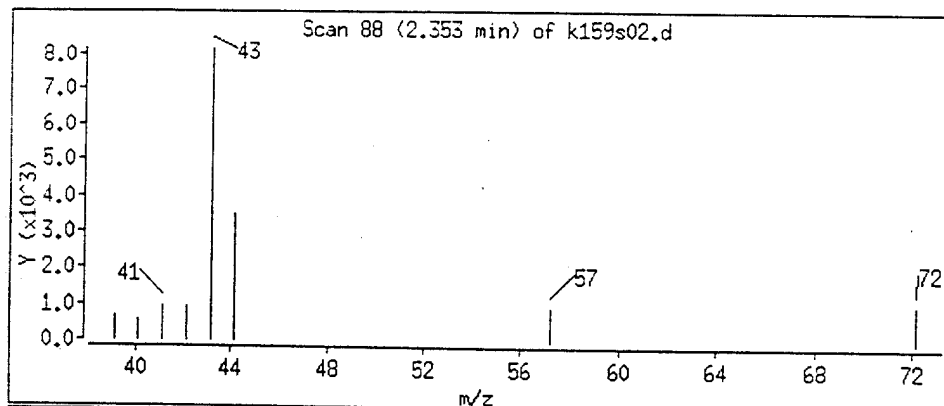
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

19 2-Butanone





Certificate of Analysis No. 9406119-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:40:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 52	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-02

Operational Tech

SAMPLE ID: A-04 BH Int.2

PARAMETER	ANALYTICAL DATA (continued) RESULTS	PQL*	UNITS
ANALYZED BY: HLW	DATE/TIME: 06/08/94 21:33:00		
METHOD: 8240, Volatile Organics - Soil			
NOTES: * - Practical Quantitation Limit	ND - Not Detected		
NA - Not Analyzed			
B = Compound present in Method Blank	D - Surr. diluted out.		
COMMENTS:			

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-13

Operational Tech

SAMPLE ID: A-02 BH Int.1

PARAMETER	ANALYTICAL DATA (continued) RESULTS	PQL*	UNITS
ANALYZED BY: HLW	DATE/TIME: 06/14/94 14:14:00		
METHOD: 8240, Volatile Organics - Soil			
NOTES: * - Practical Quantitation Limit	ND - Not Detected		
NA - Not Analyzed	D - Surr. diluted out.		

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k061494.b/k165s03.d
Lab. Id. : Quant Type: ISTD
Inj Date : 14-JUN-1994 14:14 Autotune Date: {
Operator : Inst ID: k.i
Sup Info : 9406119-8240S-13A X1
Misc Info :
Comment :
Method : /chem/k.i/k061494.b/kclps.m
Meth Date : 14-Jun-1994 17:20 hillery
Cal Date : 14-JUN-1994 10:26 Cal File: k165cc1.d
Als bottle: 11
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG		RT	REL RT	RESPONSE	CONCENTRATIONS	
	MASS					ON-COLUMN	FINAL
=====	=====		==	=====	=====	(ng)	(ug/Kg)
* 1 Bromochloromethane	128.00		2.520	(1.000)	68200	50	(Q)
\$ 16 1,2-Dichloroethane-d4	65.00		2.823	(1.120)	180353	47	47
* 18 1,4-Difluorobenzene	114.00		3.323	(1.000)	421710	50	
* 33 Chlorobenzene-d5	117.00		7.430	(1.000)	339401	50	
\$ 38 Toluene-d8	98.00		5.233	(0.704)	458411	52	52
\$ 42 Bromofluorobenzene	95.00		9.506	(1.279)	216454	56	56

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k061494.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	47	94.03	70-121
\$ 38 Toluene-d8	50	52	103.06	84-138
\$ 42 Bromofluorobenzene	50	56	111.44	59-113

* - Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found



Certificate of Analysis No. 9406119-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 17:08:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)

Data File: /chem/k.i/k061494.b/k165s03.d

Date : 14-JUN-1994 14:14

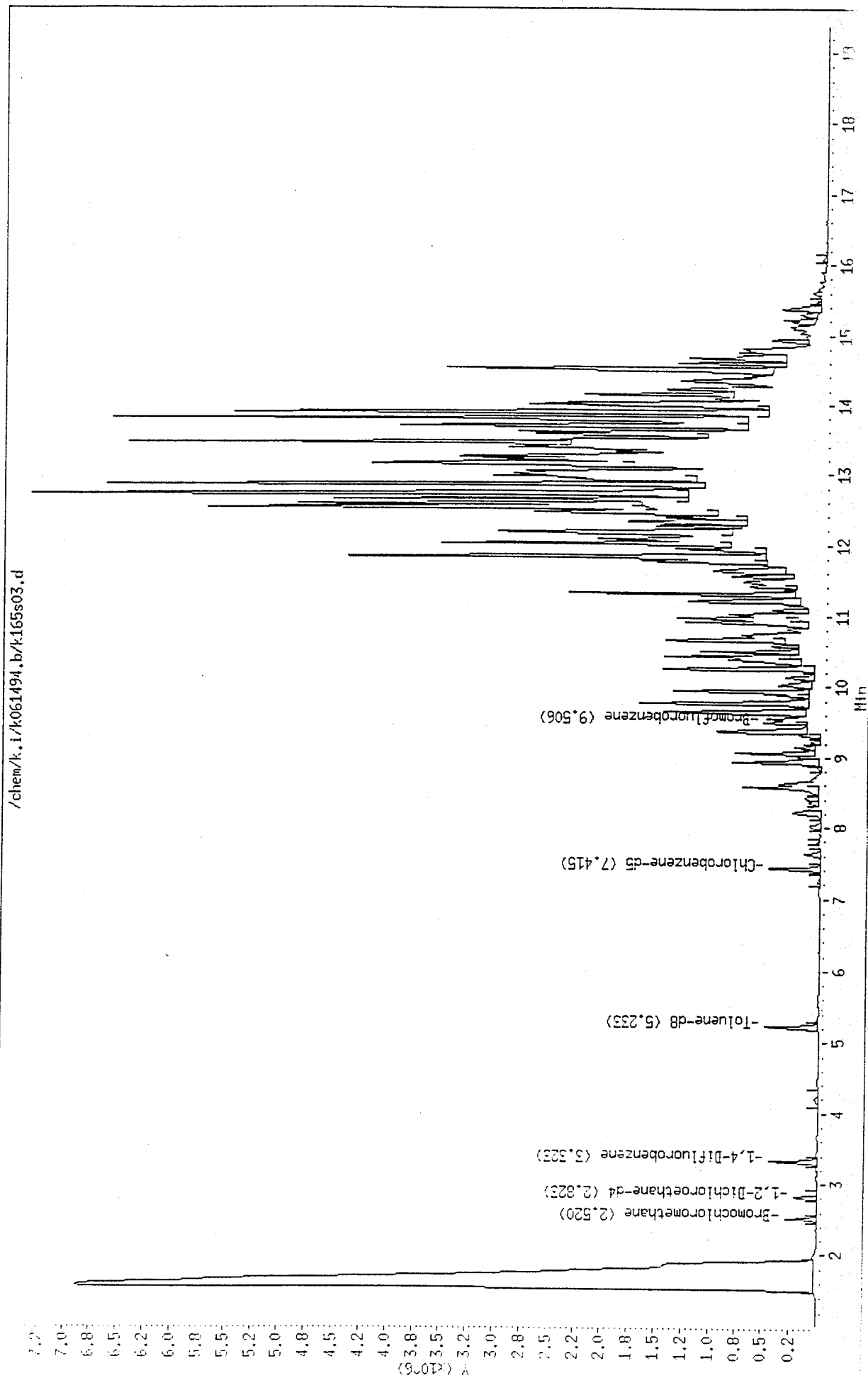
Instrument : k.i

Sample ID :

Column phase :

Volume Injected (uL) : 0.0

Column diameter : 0.25





Certificate of Analysis No. 9406119-14

Operational Tech

SAMPLE ID: A-02 BH Int.2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	

ANALYZED BY: HLW

DATE/TIME: 06/14/94 12:36:00

METHOD: 8240, Volatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

D - Surr. diluted out.

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k061494.b/k165s04.d
Lab. Id. : Quant Type: ISTD
Inj Date : 14-JUN-1994 14:39 Autotune Date: {
Operator : Inst ID: k.i
Smp Info : 9406119-8240S-14A X1
Misc Info :
Comment :
Method : /chem/k.i/k061494.b/kclps.m
Meth Date : 14-Jun-1994 17:20 hillery
Cal Date : 14-JUN-1994 10:26 Cal File: k165cc1.d
Als bottle: 12
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		RT	REL RT	RESPONSE	ON-COLUMN (ng)	FINAL (ug/Kg)
*****	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.521	(1.000)	74257	50	(Q)
8 Acetone	43.00	1.930	(0.766)	8417	12	12 (Q)
\$ 16 1,2-Dichloroethane-d4	65.00	2.824	(1.120)	190480	46	46
* 18 1,4-Difluorobenzene	114.00	3.324	(1.000)	447808	50	
* 33 Chlorobenzene-d5	117.00	7.430	(1.000)	370777	50	
\$ 38 Toluene-d8	98.00	5.233	(0.704)	487904	50	50
\$ 42 Bromofluorobenzene	95.00	9.506	(1.279)	212911	50	50

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k061494.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LCW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
S 16 1,2-Dichloroethane	50	46	91.21	70-121
S 38 Toluene-d8	50	50	100.40	84-138
S 42 Bromofluorobenzene	50	50	100.34	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

Data file : /chem/k.i/k060894.b/k159s03.d

Lab. Id. :

Inj Date : 08-JUN-1994 21:33

Operator :

Smp Info : 9406119-8240S-02A X1

Misc Info :

Comment :

Method : /chem/k.i/k060894.b/kclps.m

Meth Date : 09-Jun-1994 11:53 hillery

Cal Date : 08-JUN-1994 16:01

Als bottle: 20

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: SOIL

Quant Type: ISTD

Autotune Date: {

Inst ID: k.i

Cal File: k159cc3.d

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG MASS	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ng)	FINAL (ug/Kg)
*****	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.520	(1.000)	51630	50	(Q)
8 Acetone	43.00	1.823	(0.723)	44593	52	41.6 w
\$ 16 1,2-Dichloroethane-d4	65.00	2.838	(1.126)	137583	48	48
* 18 1,4-Difluorobenzene	114.00	3.338	(1.000)	389942	50	
* 23 Chlorobenzene-d5	117.00	7.445	(1.000)	299969	50	
\$ 38 Toluene-d8	98.00	5.263	(0.707)	421919	53	53
\$ 42 Bromofluorobenzene	95.00	9.520	(1.279)	165890	49	49

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	48	96.17	70-121
\$ 38 Toluene-d8	50	53	105.53	84-138
\$ 42 Bromofluorobenzene	50	49	98.64	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: k.i
 Lab File ID: k159s03.d
 Lab Sample ID:
 Analysis Type: VOA
 Quant Type: ISTD
 Method File: /chem/k.i/k060894.b/kclps.m
 Misc Info:

Calibration Date: 06/08/94
 Calibration Time: 1601
 Sample Type: SOIL
 Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	62390	31195	124780	51630	-17.25
18 1,4-Difluorobenzene	436788	218394	873576	389942	-10.73
33 Chlorobenzene-d5	349737	174868	699474	299969	-14.23

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	2.52	2.02	3.02	2.52	-0.02
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	-0.01
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159s03.d

Date : 08-JUN-1994 21:33

Instrument : k.i

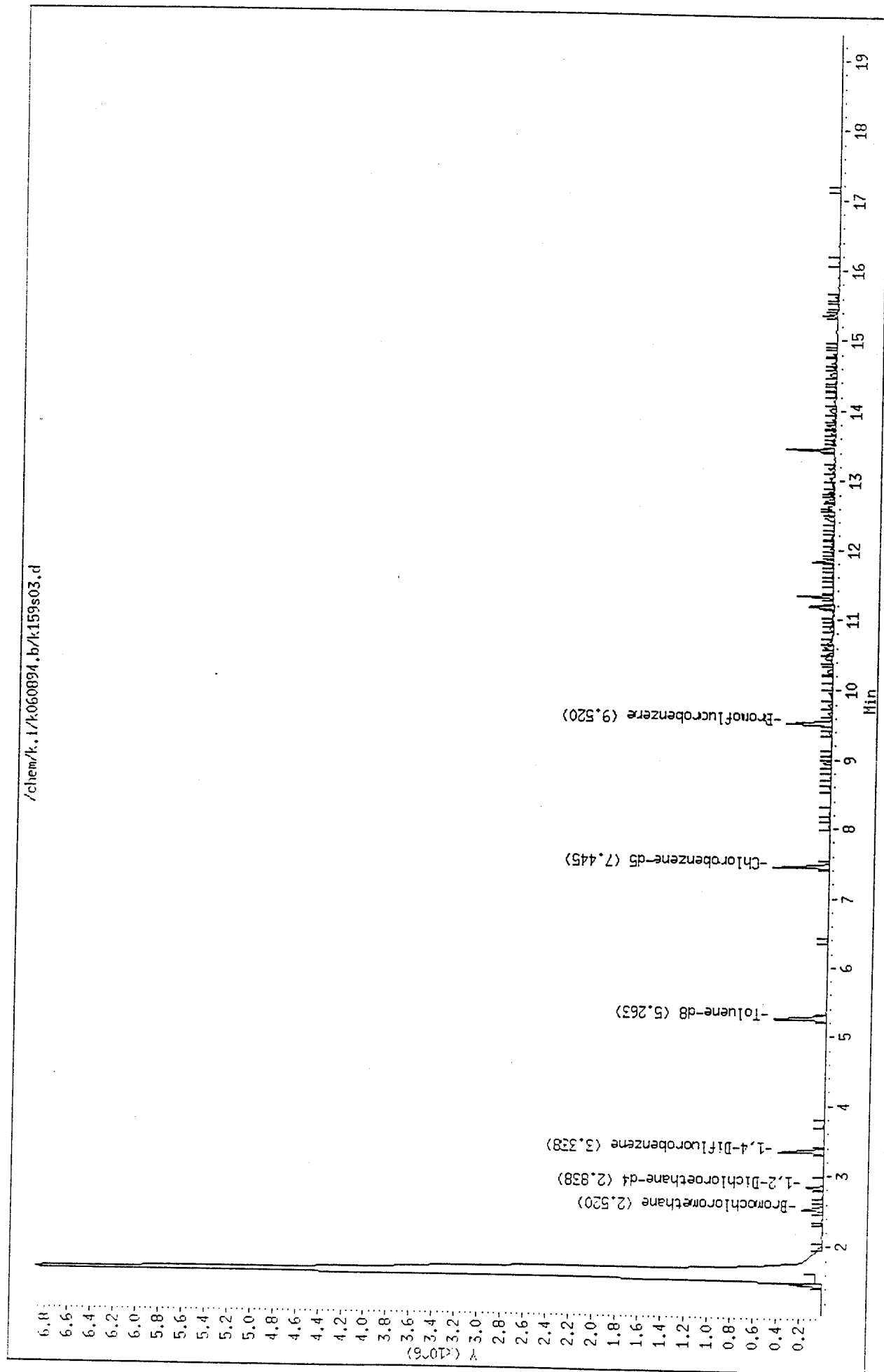
Sample ID :

Column phase :

Volume Injected (uL) : 0.0

Page 4

Column diameter : 0.25



Date : 08-JUN-1994 21:33

Instrument : k.1

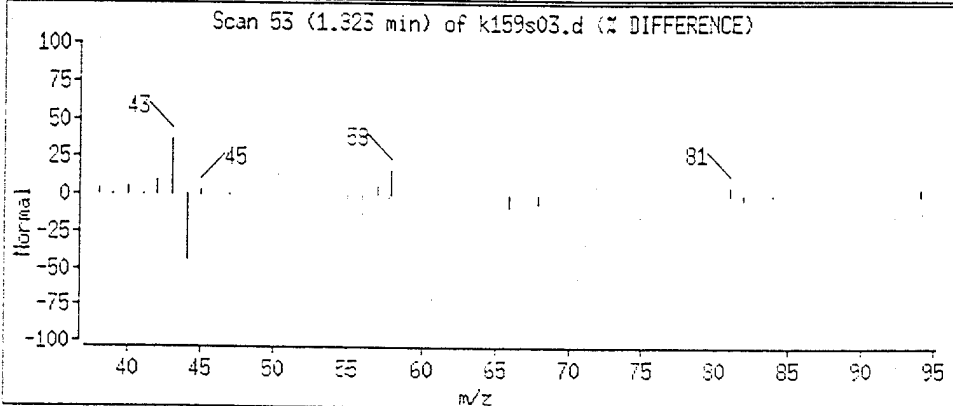
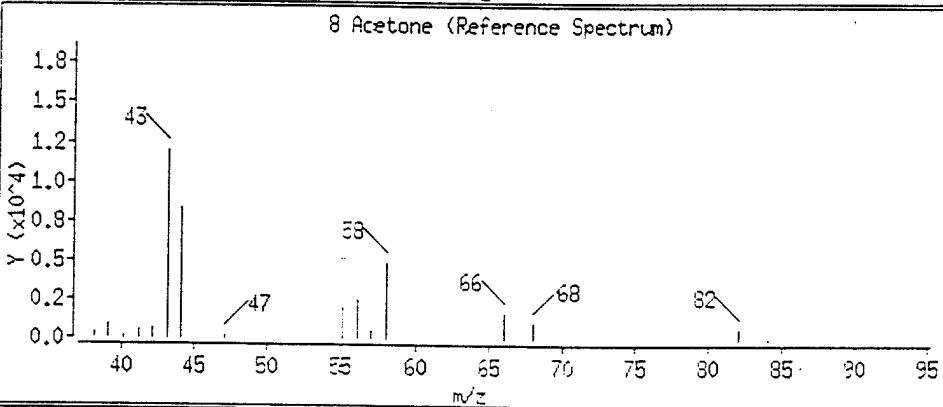
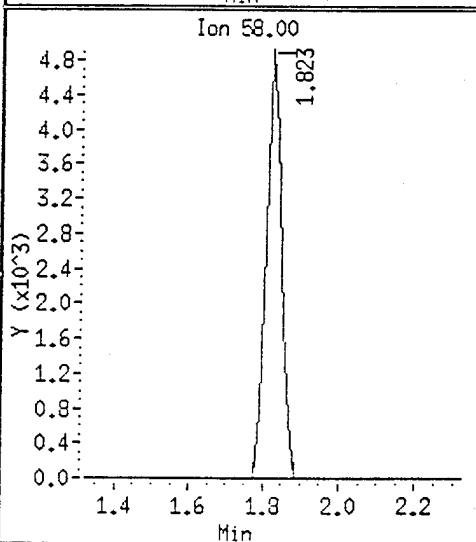
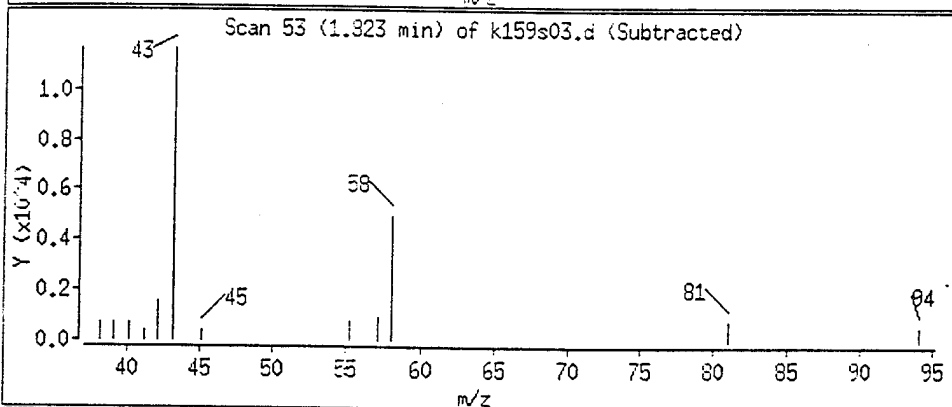
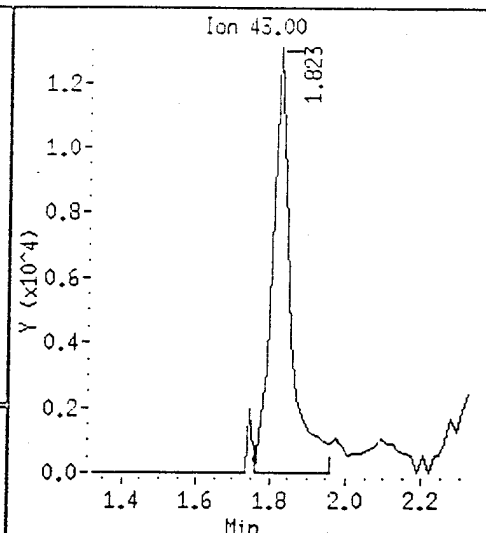
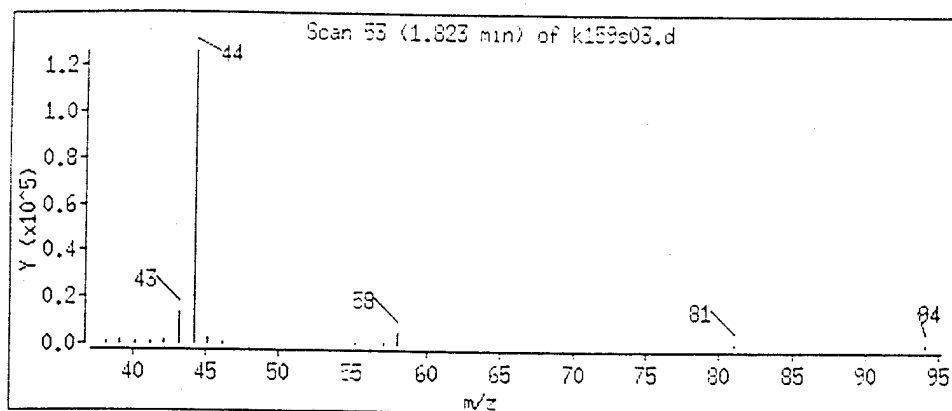
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.1

8 Acetone



SPL Labs

Data file : /chem/k.i/k060894.b/k159s04.d

Lab. Id. :

Inj Date : 08-JUN-1994 21:57

Operator :

Smp Info : 9406119-8240S-03A X1

Misc Info :

Comment :

Method : /chem/k.i/k060894.b/kclps.m

Meth Date : 09-Jun-1994 11:53 hillery

Cal Date : 08-JUN-1994 16:01

Als bottle: 21

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: SOIL

Quant Type: ISTD

Autotune Date: {

Inst ID: k.i

Cal File: k159cc3.d

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG MASS	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ng)	FINAL (ug/Kg)
*****	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.519	(1.000)	54169	50	(Q)
8 Acetone	43.00	1.822	(0.723)	21456	24	24 <i>know</i>
S 16 1,2-Dichloroethane-d4	65.00	2.838	(1.126)	147225	49	49
* 18 1,4-Difluorobenzene	114.00	3.338	(1.000)	385364	50	
* 33 Chlorobenzene-d5	117.00	7.444	(1.000)	256556	50	
36 Tetrachloroethene	164.00	6.504	(0.874)	22811	17	17 <i>know</i>
S 38 Toluene-d8	98.00	5.247	(0.705)	402218	59	59
S 42 Bromofluorobenzene	95.00	9.520	(1.279)	122755	43	43

QC Flag Legend

Q - Qualifier signal failed the ratio test.



Certificate of Analysis No. 9406119-03

Operational Tech

SAMPLE ID: A-05 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
ANALYZED BY: HLW			
DATE/TIME: 06/08/94 21:57:00			
METHOD: 8240, Volatile Organics - Soil			
NOTES:	* - Practical Quantitation Limit	ND - Not Detected	
	NA - Not Analyzed		
	B = Compound present in Method Blank	D - Surr. diluted out.	
COMMENTS:			

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:15:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 24	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	17	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	49	98.08	70-121
\$ 38 Toluene-d8	50	59	117.63	84-138
\$ 42 Bromofluorobenzene	50	43	85.34	59-113

* - Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: k.i
 Lab File ID: k159s04.d
 Lab Sample ID:
 Analysis Type: VOA
 Quant Type: ISTD
 Method File: /chem/k.i/k060894.b/kclps.m
 Misc Info:

Calibration Date: 06/08/94
 Calibration Time: 1601
 Sample Type: SCIL
 Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	62390	31195	124780	54169	-13.18
18 1,4-Difluorobenzene	436788	218394	873576	385364	-11.77
33 Chlorobenzene-d5	349737	174868	699474	256556	-26.64

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.52	-0.05
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	-0.04
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159s04.d

Date : 08-JUN-1994 21:57

Instrument : k.i

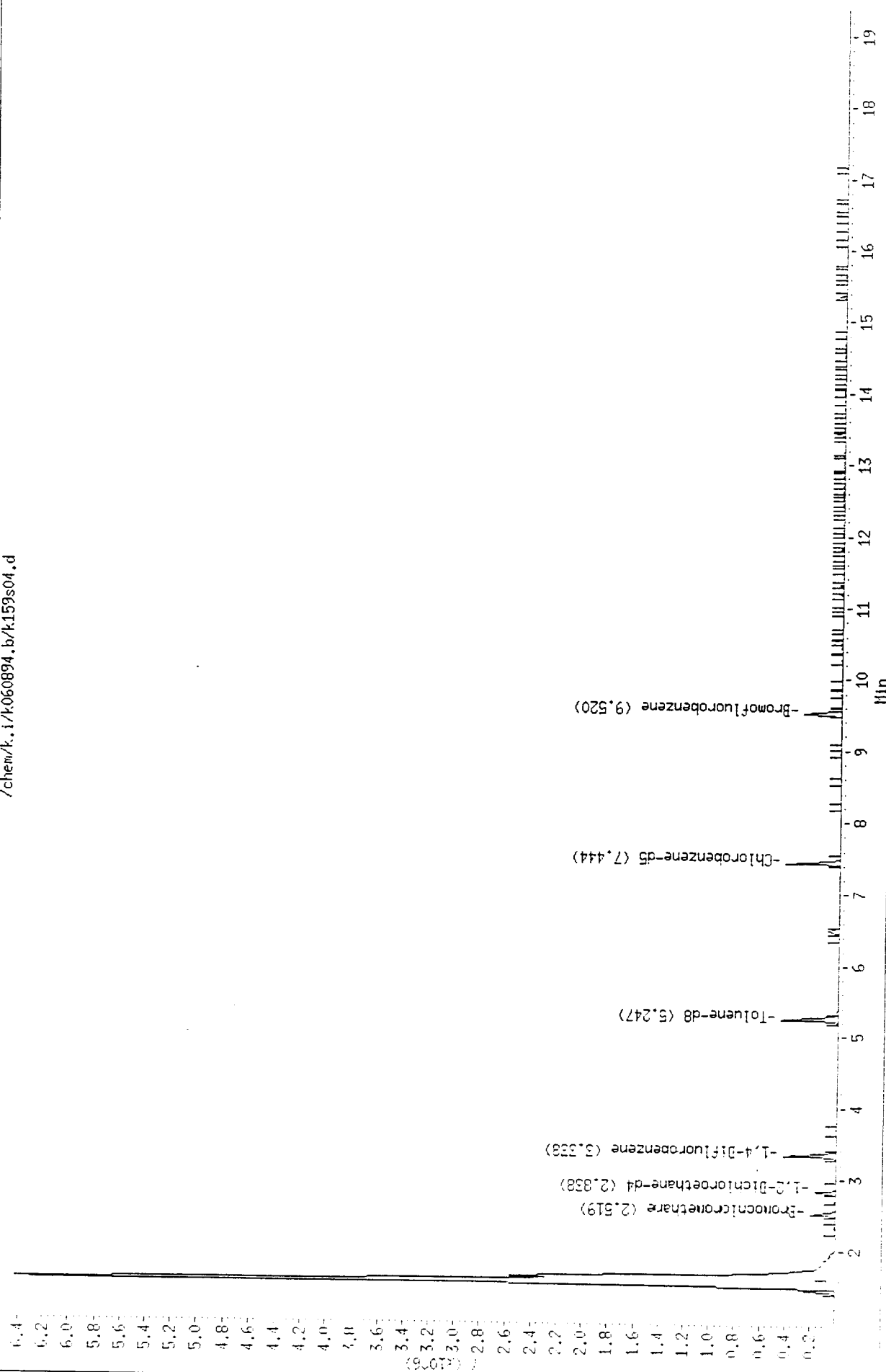
Sample ID :

Column phase :

Volume Injected (ul) : 0.0

Column diameter : 0.25

/chem/k.i/k060894.b/k159s04.d



Data File: /chem/k.1/k060894.b/k159s04.d

Page 5

Date : 08-JUN-1994 21:57

Instrument : K.1

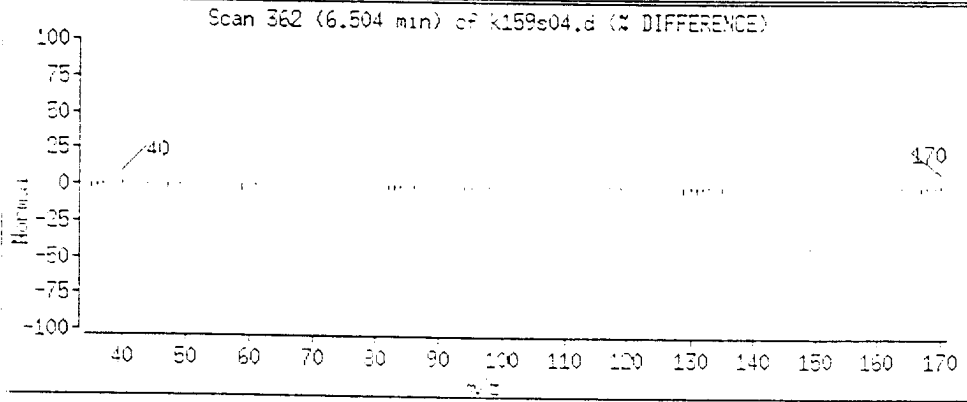
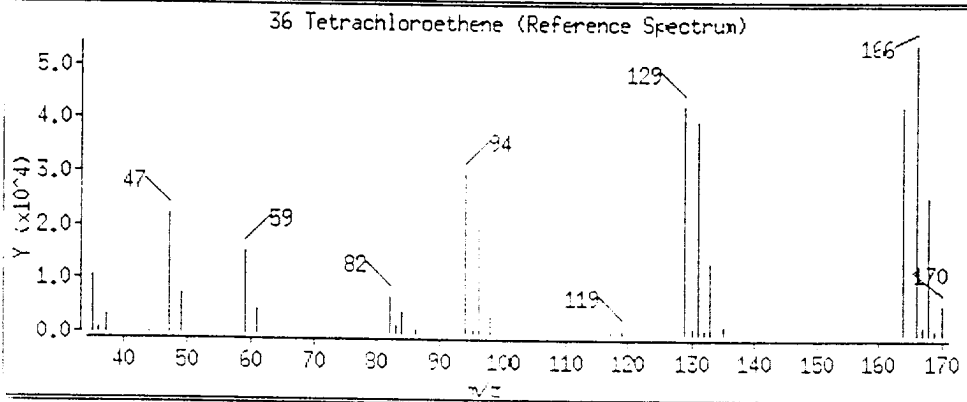
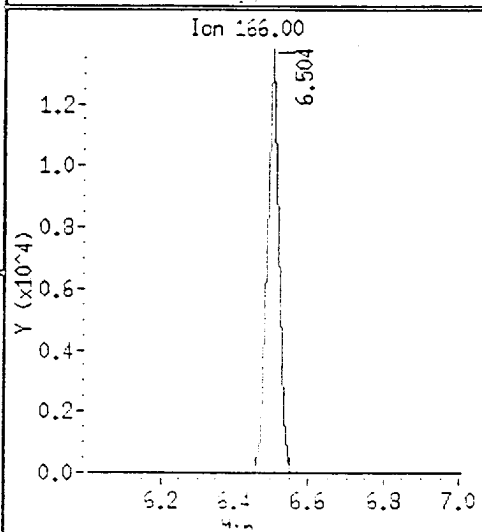
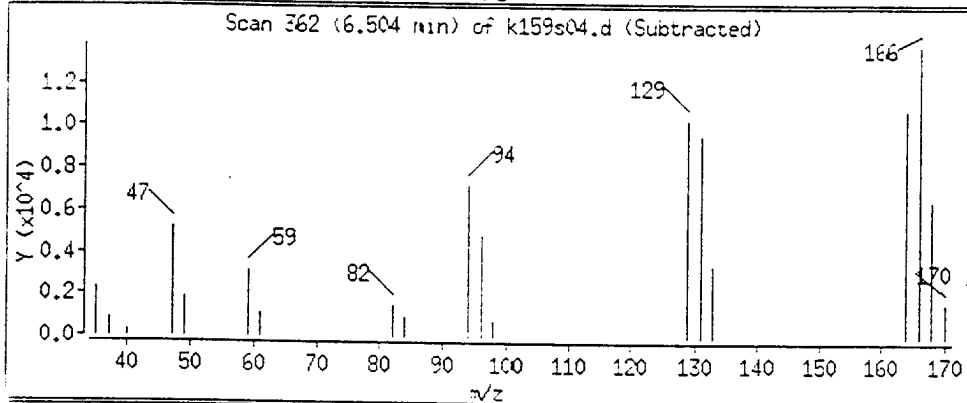
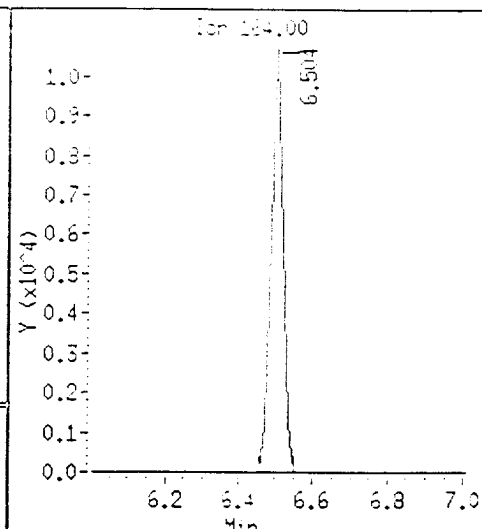
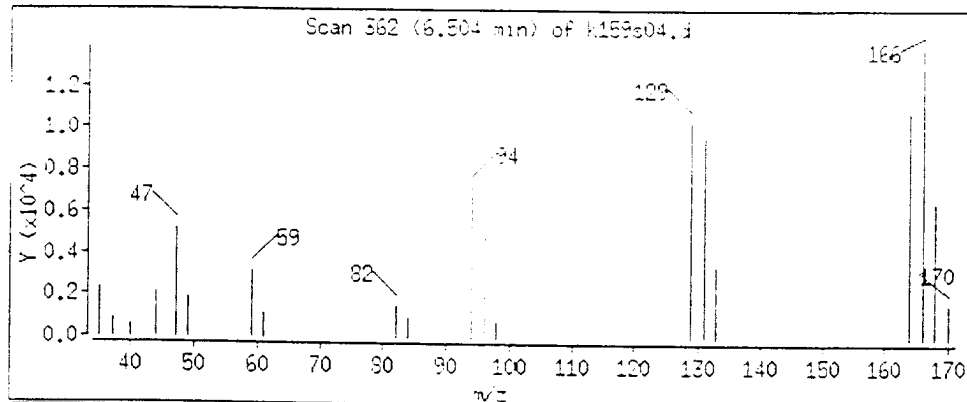
Sample ID :

Column phase :

Column diameter : 0.25

Volume injected (uL) : 0.0

36 Tetrachloroethene





Certificate of Analysis No. 9406119-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:18:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 18	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-04

Operational Tech

SAMPLE ID: A-05 BH Int.2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
ANALYZED BY: HLW			
DATE/TIME: 06/08/94 22:46:00			
METHOD: 8240, Volatile Organics - Soil			
NOTES: * - Practical Quantitation Limit			
NA - Not Analyzed		ND - Not Detected	
B = Compound present in Method Blank		D - Surr. diluted out.	
COMMENTS:			

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k060894.b/k159s05.d
Lab. Id. : Quant Type: ISTD
Inj Date : 08-JUN-1994 22:21 Autotune Date: {
Operator : Inst ID: k.i
Smp Info : 9406119-8240S-04A X1
Misc Info :
Comment :
Method : /chem/k.i/k060894.b/kclps.m
Meth Date : 27-Jun-1994 10:19 csadmin
Cal Date : 08-JUN-1994 16:01 Cal File: k159cc3.d
Als bottle: 22
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		ON-COLUMN	FINAL			
	MASS	RT	REL RT	RESPONSE	(ng)	(ug/Kg)
*****	----	==	=====	-----	-----	-----
* 1 Bromochloromethane	128.00	2.520	(1.000)	54547	50	(Q)
8 Acetone	43.00	1.823	(0.723)	16382	18	18
\$ 16 1,2-Dichloroethane-d4	65.00	2.823	(1.120)	147688	49	49
* 18 1,4-Difluorobenzene	114.00	3.338	(1.000)	382689	50	
* 33 Chlorobenzene-d5	117.00	7.444	(1.000)	312469	50	
\$ 38 Toluene-d8	98.00	5.247	(0.705)	420177	50	50
\$ 42 Bromofluorobenzene	95.00	9.520	(1.279)	177940	51	51

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: /chem/k.i/k060894.b/k159s05.d

Date : 08-JUN-1994 22:21

Instrument : k.i

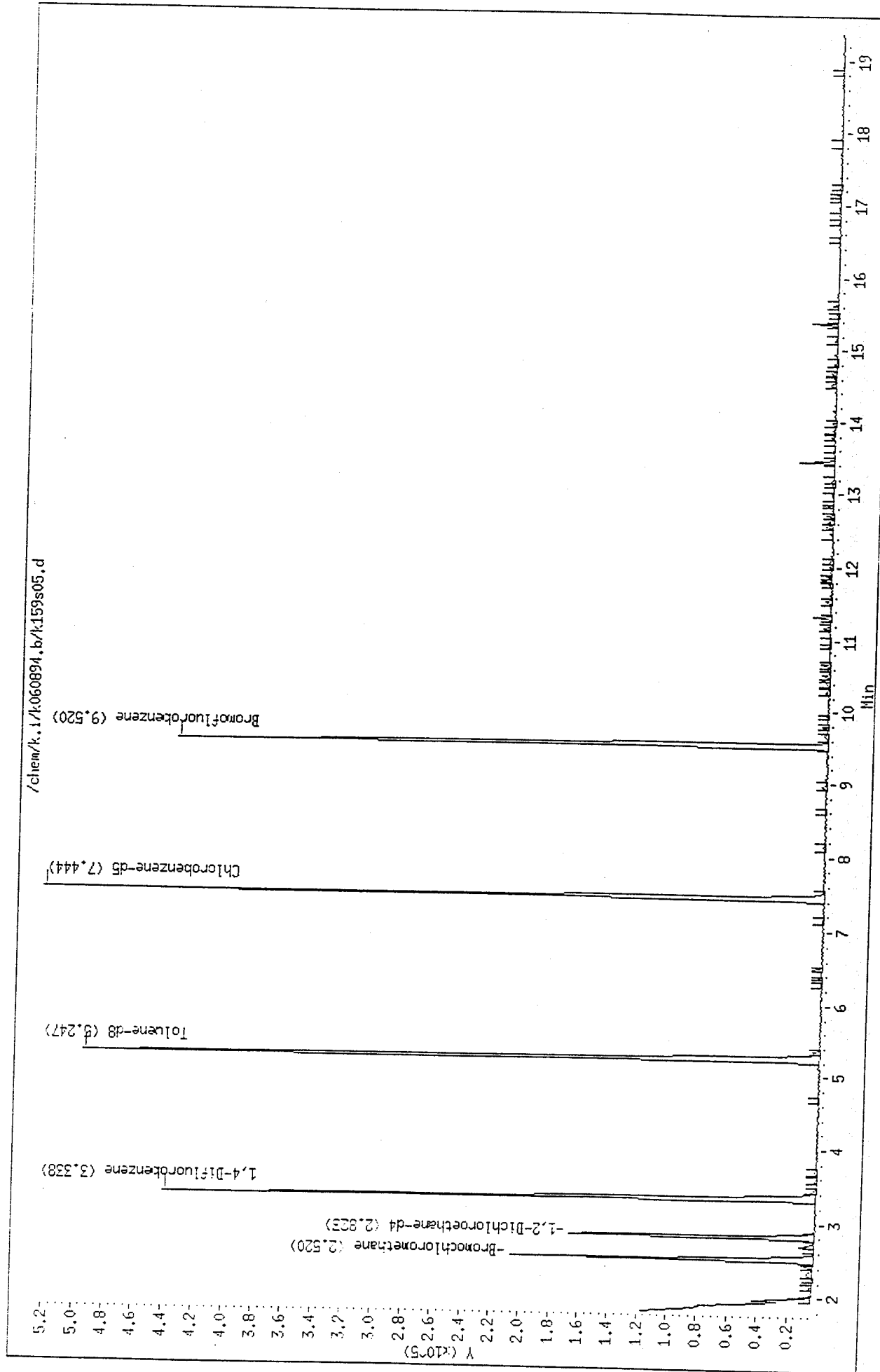
Sample ID :

Column phase :

Volume Injected (μL) : 0.0

Page 1

Column diameter : 0.25



Date : 08-JUN-1994 22:21

Instrument : k.i

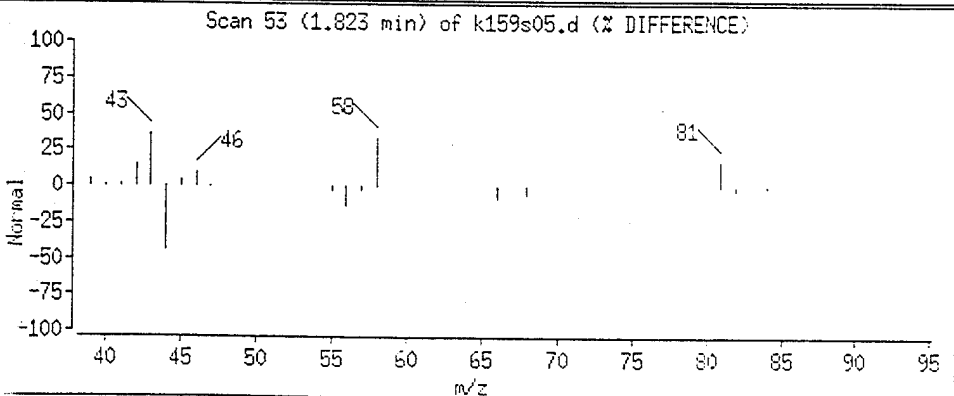
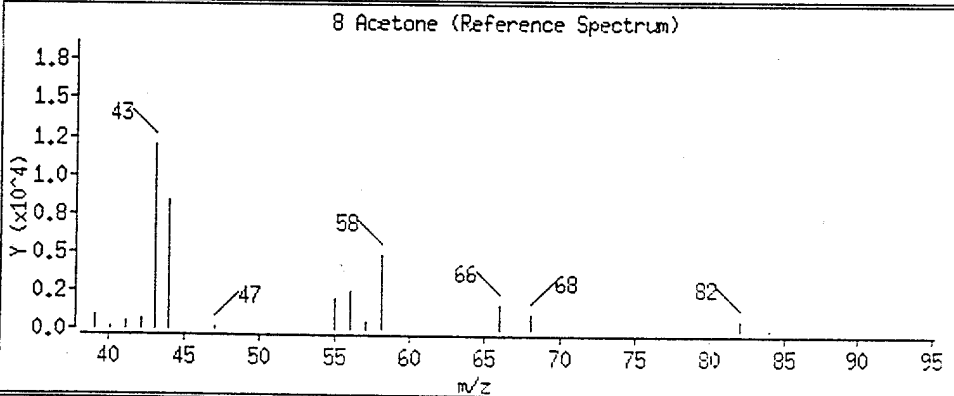
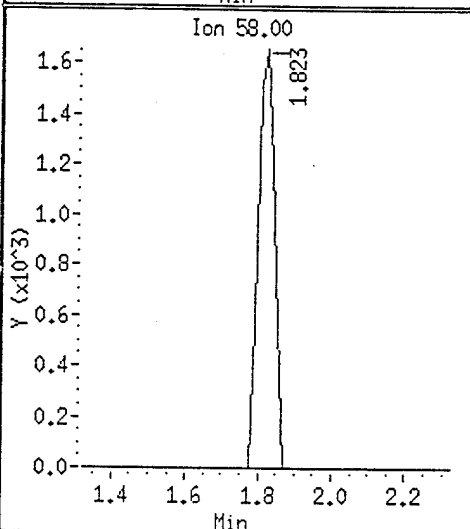
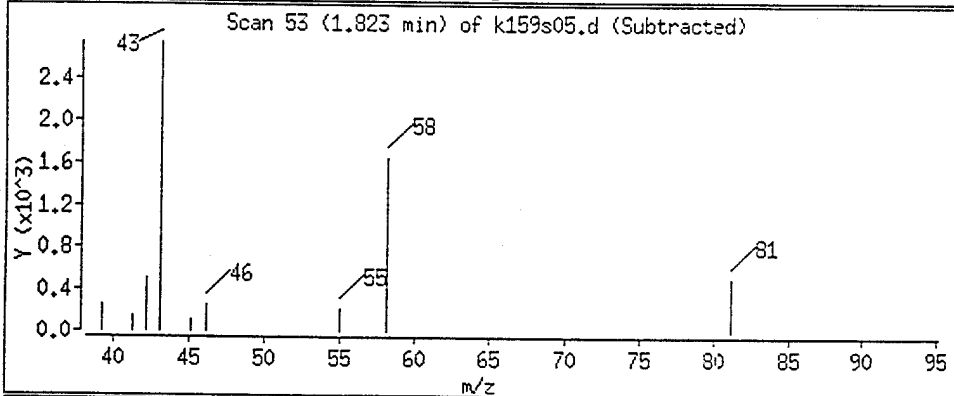
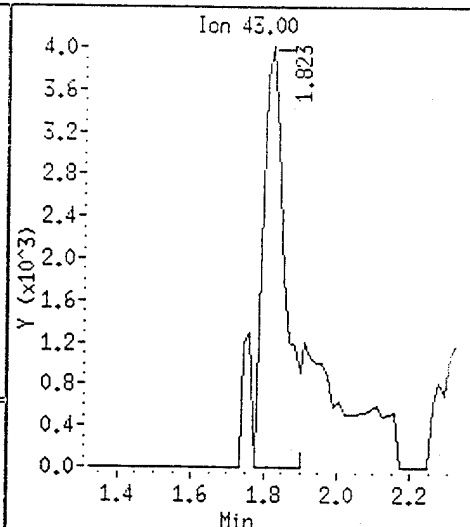
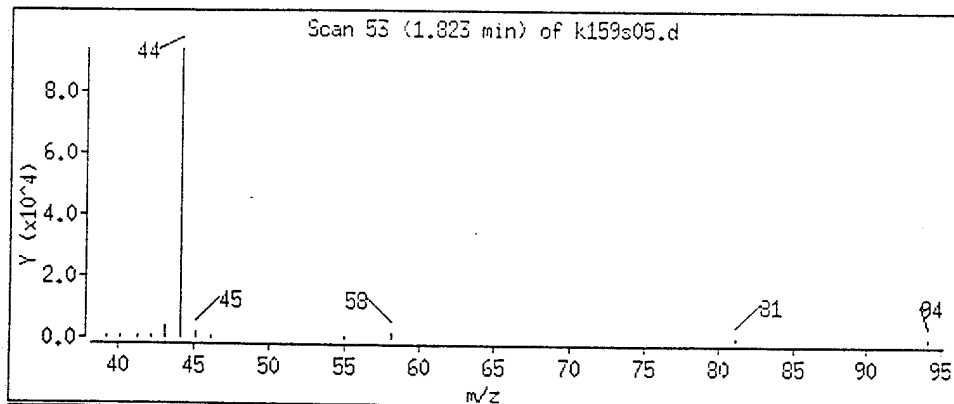
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

8 Acetone



SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	49	97.71	70-121
\$ 38 Toluene-d8	50	50	100.89	84-138
\$ 42 Bromofluorobenzene	50	51	101.57	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159s05.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

Calibration Date: 06/08/94
Calibration Time: 1601
Sample Type: SOIL
Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	62390	31195	124780	54547	-12.57
18 1,4-Difluorobenzene	436788	218394	873576	382689	-12.39
33 Chlorobenzene-d5	349737	174868	699474	312469	-10.66

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	2.52	2.02	3.02	2.52	-0.05
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	-0.03
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.



Certificate of Analysis No. 9406119-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:50:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	PQL*		
Acetone	B 20	10		µg/Kg
Benzene	ND	5		µg/Kg
Bromodichloromethane	ND	5		µg/Kg
Bromoform	ND	5		µg/Kg
Bromomethane	ND	10		µg/Kg
2-Butanone	ND	20		µg/Kg
Carbon Disulfide	ND	5		µg/Kg
Carbon Tetrachloride	ND	5		µg/Kg
Chlorobenzene	ND	5		µg/Kg
Chloroethane	ND	10		µg/Kg
2-Chloroethylvinylether	ND	10		µg/Kg
Chloroform	ND	5		µg/Kg
Chloromethane	ND	10		µg/Kg
Dibromochloromethane	ND	5		µg/Kg
1,1-Dichloroethane	ND	5		µg/Kg
1,1-Dichloroethene	ND	5		µg/Kg
1,2-Dichloroethane	ND	5		µg/Kg
total-1,2-Dichloroethene	ND	5		µg/Kg
1,2-Dichloropropane	ND	5		µg/Kg
cis-1,3-Dichloropropene	ND	5		µg/Kg
trans-1,3-Dichloropropene	ND	5		µg/Kg
Ethylbenzene	ND	5		µg/Kg
2-Hexanone	ND	10		µg/Kg
Methylene Chloride	ND	5		µg/Kg
4-Methyl-2-Pentanone	ND	10		µg/Kg
Styrene	ND	5		µg/Kg
1,1,2,2-Tetrachloroethane	ND	5		µg/Kg
Tetrachloroethene	7	5		µg/Kg
Toluene	ND	5		µg/Kg
1,1,1-Trichloroethane	ND	5		µg/Kg
1,1,2-Trichloroethane	ND	5		µg/Kg
Trichloroethene	ND	5		µg/Kg
Trichlorofluoromethane	ND	5		µg/Kg
Vinyl Acetate	ND	10		µg/Kg
Vinyl Chloride	ND	10		µg/Kg
Xylenes (total)	ND	5		µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-05

Operational Tech

SAMPLE ID: A-06 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS	
	RESULTS	PQL*		
ANALYZED BY: HLW				
DATE/TIME: 06/08/94 23:10:00				
METHOD: 8240, Volatile Organics - Soil				
NOTES:	* - Practical Quantitation Limit	ND - Not Detected		
	NA - Not Analyzed			
	B = Compound present in Method Blank	D - Surr. diluted out.		

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k060894.b/k159s06.d
Lab. Id. :
Inj Date : 08-JUN-1994 22:46
Operator :
Smp Info : 9406119-8240S-05A X1
Misc Info :
Comment :
Method : /chem/k.i/k060894.b/kclps.m
Meth Date : 09-Jun-1994 11:53 hillery
Cal Date : 08-JUN-1994 16:01
Als bottle: 23
Dil Factor: 1.000
Integrator: HP RTE
Sample Matrix: SOIL

Quant Type: ISTD
Autotune Date: {
Inst ID: k.i
Cal File: k159cc3.d
Target Version: Target 3.00
Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	ON-COLUMN (ng)	FINAL (ug/Kg)
*****	----		==	-----	-----	-----
* 1 Bromochloromethane	128.00	2.520 (1.000)	50232	50	(Q)	
8 Acetone	43.00	1.823 (0.723)	16424	20	20	48
\$ 16 1,2-Dichloroethane-d4	65.00	2.838 (1.126)	134573	48		
* 18 1,4-Difluorobenzene	114.00	3.338 (1.000)	373875	50		
* 33 Chlorobenzene-d5	117.00	7.444 (1.000)	250156	50		
36 Tetrachloroethene	164.00	6.505 (0.874)	9136	7	7	58
\$ 38 Toluene-d8	98.00	5.247 (0.705)	390641	58		
\$ 42 Bromofluorobenzene	95.00	9.520 (1.279)	123937	44		

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	48	96.68	70-121
\$ 38 Toluene-d8	50	58	117.17	84-138
\$ 42 Bromofluorobenzene	50	44	88.37	59-113

* - Values outside of QC limits

Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159s06.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

Calibration Date: 06/08/94
Calibration Time: 1601
Sample Type: SOIL
Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	62390	31195	124780	50232	-19.49
18 1,4-Difluorobenzene	436788	218394	873576	373875	-14.40
33 Chlorobenzene-d5	349737	174868	699474	250156	-28.47

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.52	-0.04
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	-0.03
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159s06.d

Date : 08-JUN-1994 22:46

Instrument : K.I

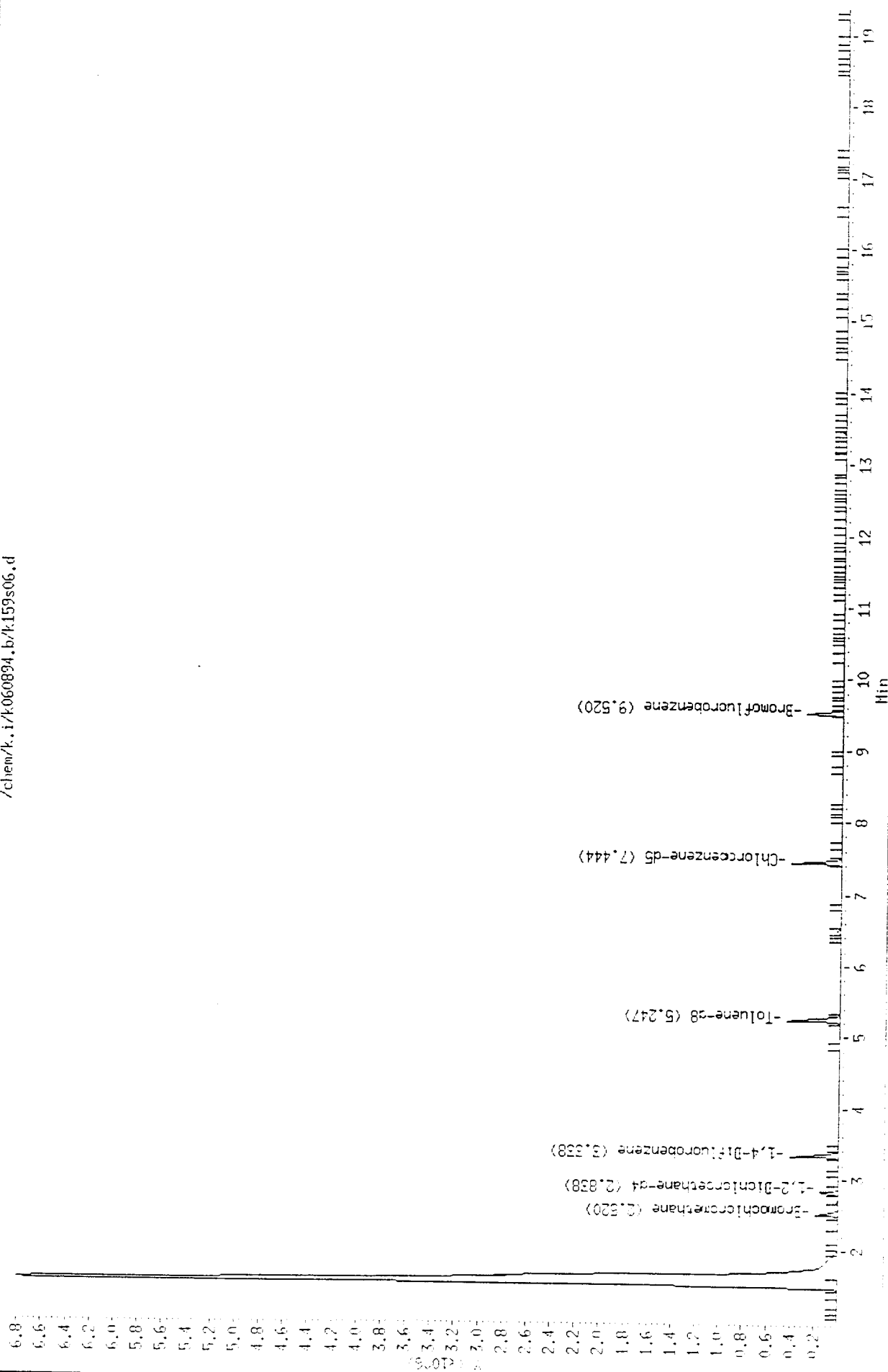
Sample ID :

Column phase :

Volume Injected (ul) : 0.0

Column diameter : 0.25

/chem/k.i/k060894.b/k159s06.d



Date : 08-JUN-1994 12:46

Instrument : k11

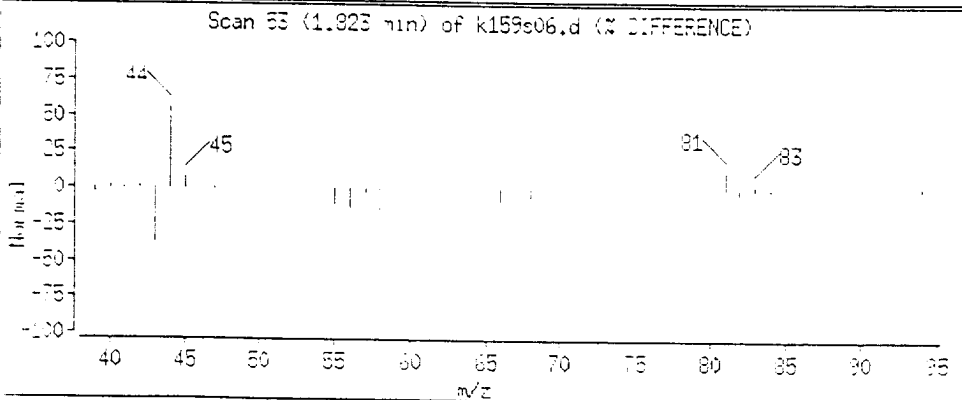
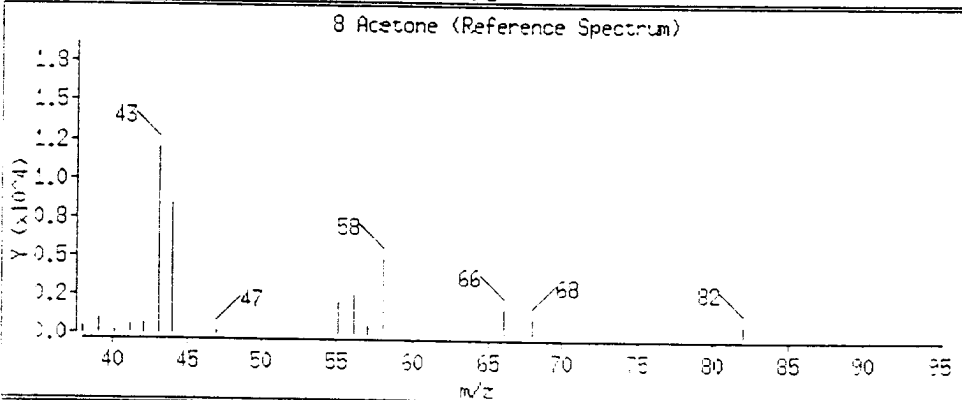
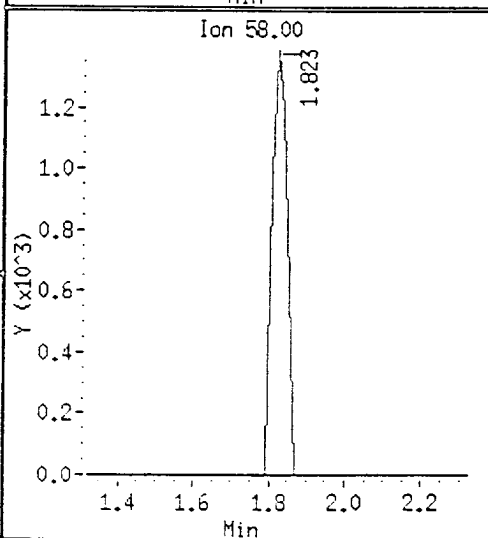
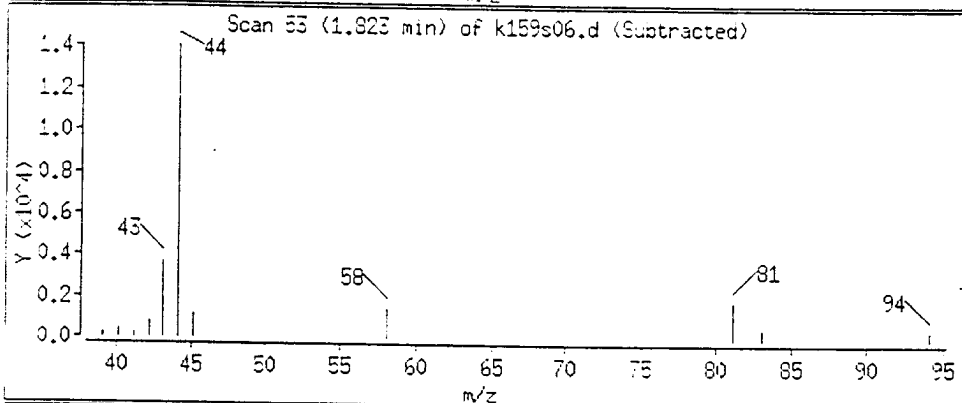
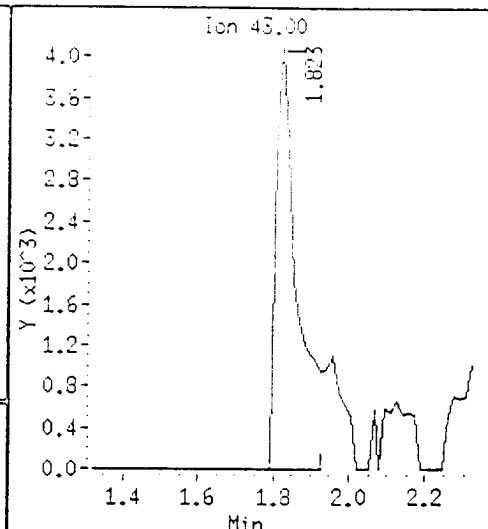
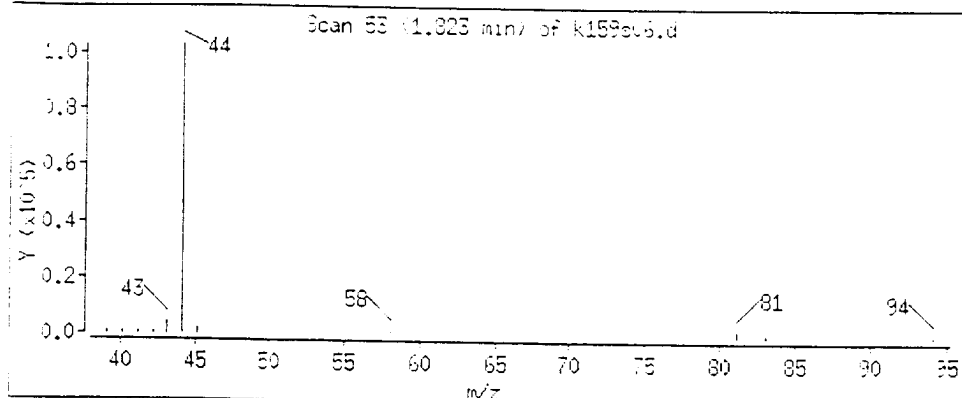
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (UL) : 0.0

3 Acetone



Date : 08-JUN-1994 22:46

Instrument : K.1

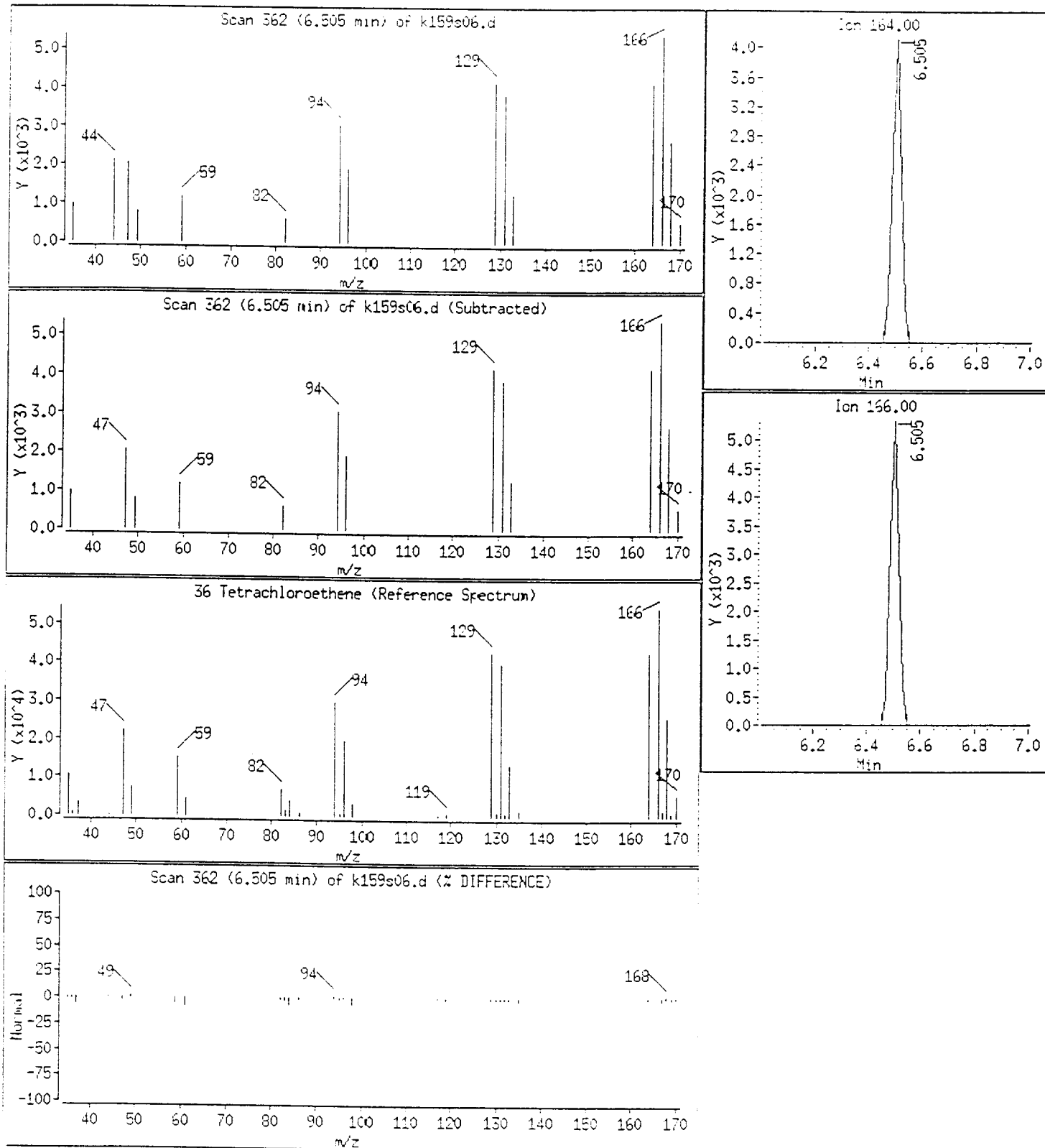
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

36 Tetrachloroethene





Certificate of Analysis No. 9406119-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 14:10:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 20	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-06

Operational Tech

SAMPLE ID: A-06 BH Int.2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
ANALYZED BY: HLB			
DATE/TIME: 06/08/94 23:10:00			
METHOD: 8240, Volatile Organics - Soil			
NOTES:	* - Practical Quantitation Limit	ND - Not Detected	
	NA - Not Analyzed		
	B = Compound present in Method Blank	D - Surr. diluted out.	
COMMENTS:			

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:07:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 11	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-08

Operational Tech

SAMPLE ID: A-07 BH Int.2

PARAMETER	ANALYTICAL DATA (continued) RESULTS	PQL*	UNITS
ANALYZED BY: HLW	DATE/TIME: 06/08/94 23:58:00		
METHOD: 8240, Volatile Organics - Soil			
NOTES: * - Practical Quantitation Limit	ND - Not Detected		
NA - Not Analyzed			
B = Compound present in Method Blank	D - Surr. diluted out.		

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Data file : /chem/k.i/k060894.b/k159s09.d
Lab. Id. :
Inj Date : 08-JUN-1994 23:58
Operator :
Smp Info : 9406119-8240S-08A X1
Misc Info :
Comment :
Method : /chem/k.i/k060894.b/kclps.m
Meth Date : 09-Jun-1994 11:53 hillery
Cal Date : 08-JUN-1994 16:01
Als bottle: 26
Dil Factor: 1.000
Integrator: HP RTE
Sample Matrix: SOIL

Quant Type: ISTD
Autotune Date: {
Inst ID: k.i
Cal File: k159cc3.d
Target Version: Target 3.00
Compound Sublist: all.sub

Compounds	QUANT SIG		CONCENTRATIONS			
	MASS	RT	REL RT	RESPONSE	ON-COLUMN (ng)	FINAL (ug/Kg)
-----	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.536	(1.000)	52746	50	(Q) 11.5
8 Acetone	43.00	1.823	(0.719)	9270	11	11
\$ 16 1,2-Dichloroethane-d4	65.00	2.839	(1.119)	137760	47	47
* 18 1,4-Difluorobenzene	114.00	3.339	(1.000)	403004	50	
* 33 Chlorobenzene-d5	117.00	7.445	(1.000)	317644	50	
\$ 38 Toluene-d8	98.00	5.263	(0.707)	446120	53	53
\$ 42 Bromofluorobenzene	95.00	9.521	(1.279)	174813	49	49

QC Flag Legend

Q - Qualifier signal failed the ratio test.

Data File: /chem/k.i/k060894.b/k159s09.d
Report Date: 09-Jun-1994 11:54

Page 1

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	47	94.25	70-121
\$ 38 Toluene-d8	50	53	105.38	84-138
\$ 42 Bromofluorobenzene	50	49	98.16	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: k.i
 Lab File ID: k159s09.d
 Lab Sample ID:
 Analysis Type: VOA
 Quant Type: ISTD
 Method File: /chem/k.i/k060894.b/kclps.m
 Misc Info:

Calibration Date: 06/08/94
 Calibration Time: 1601
 Sample Type: SOIL
 Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	62390	31195	124780	52746	-15.46
18 1,4-Difluorobenzene	436788	218394	873576	403004	-7.73
33 Chlorobenzene-d5	349737	174868	699474	317644	-9.18

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.54	0.59
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	-0.01
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159s09.d

Date : 08-JUN-1994 23:58

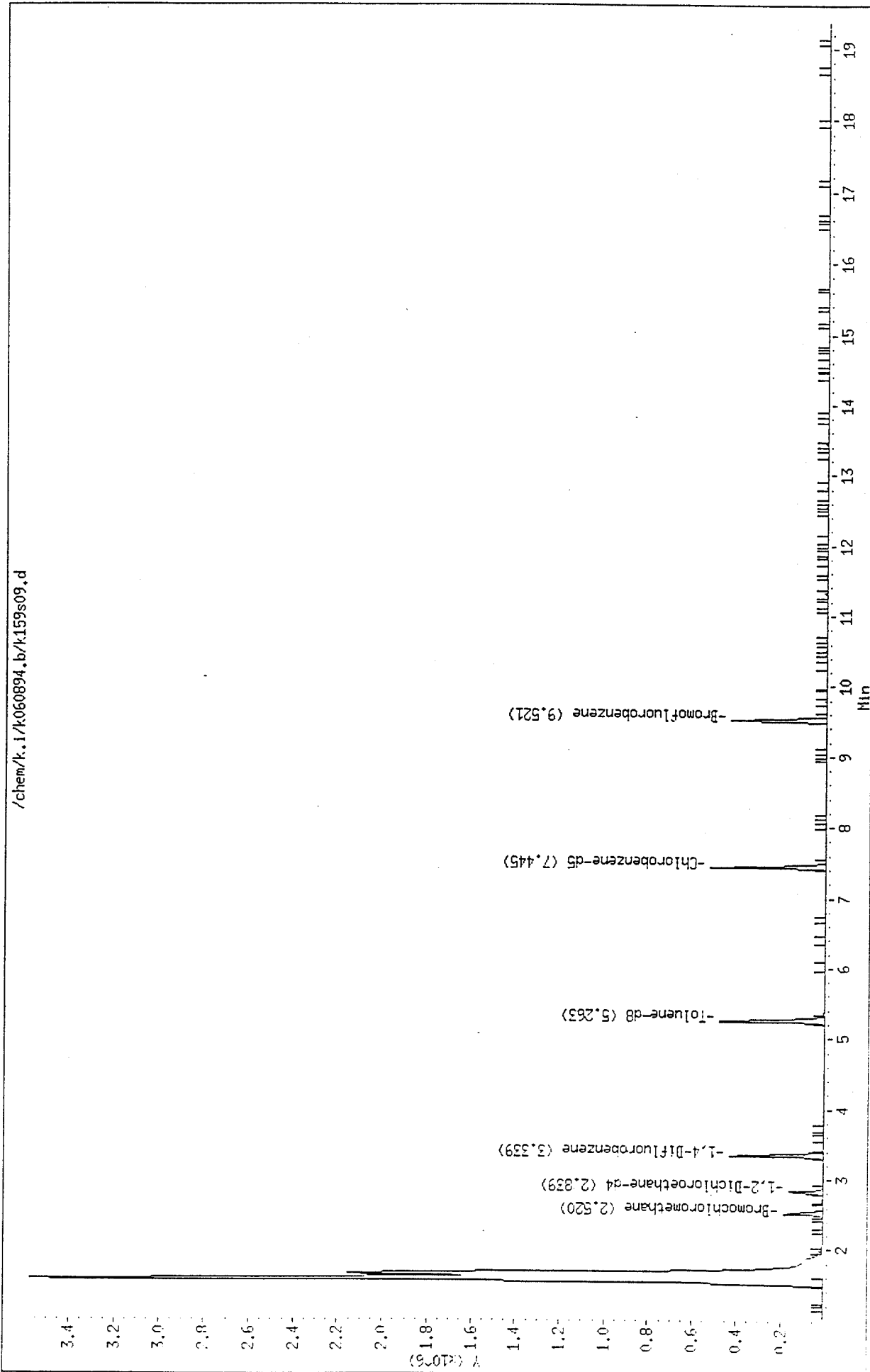
Instrument : k.i

Sample ID :

Column phase :

Volume Injected (uL) : 0.0

Column diameter : 0.25



Date : 08-JUN-1994 23:59

Instrument : k.i

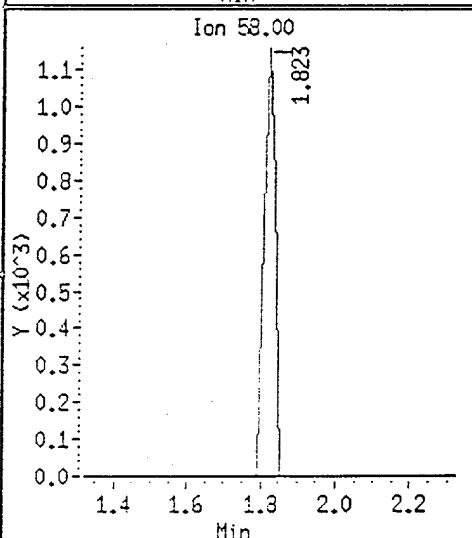
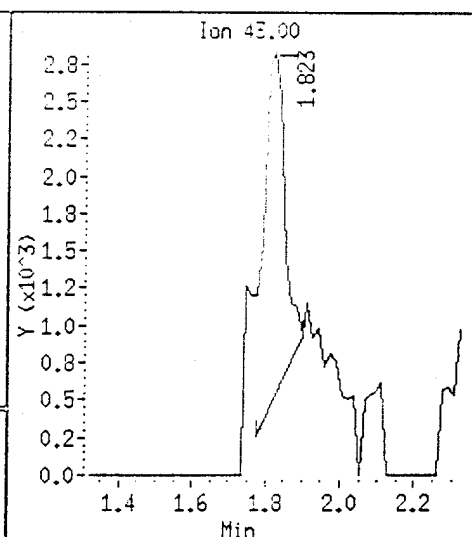
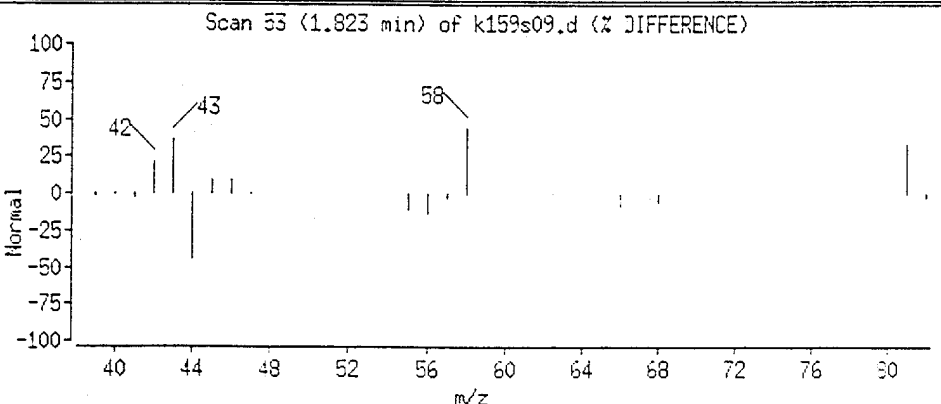
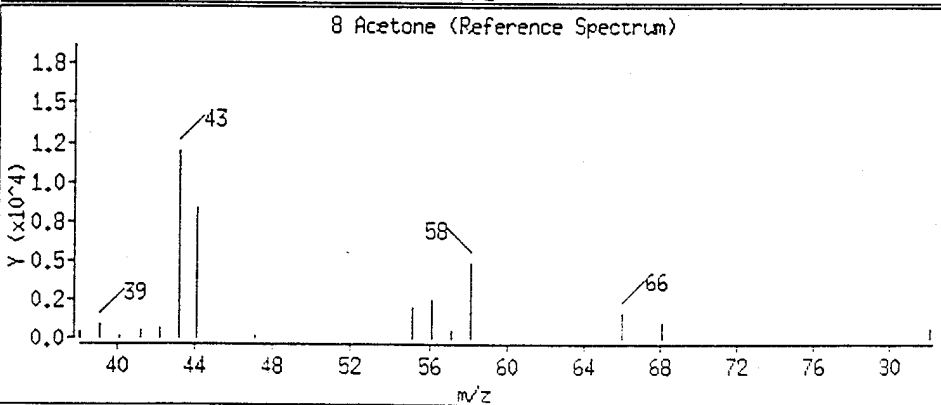
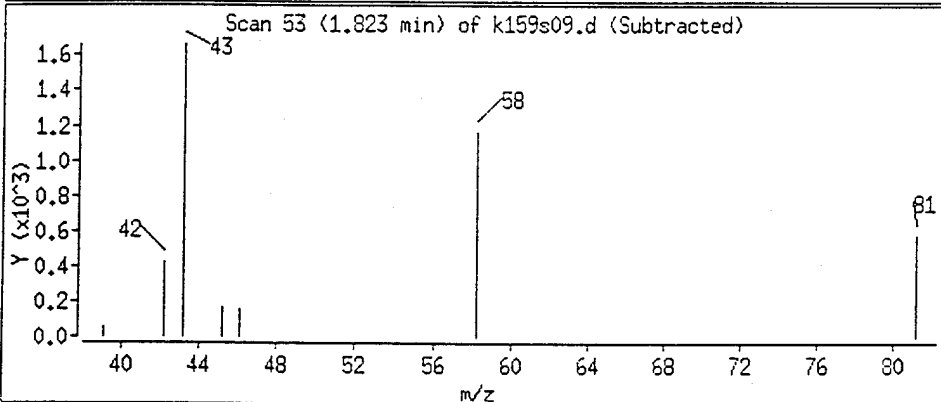
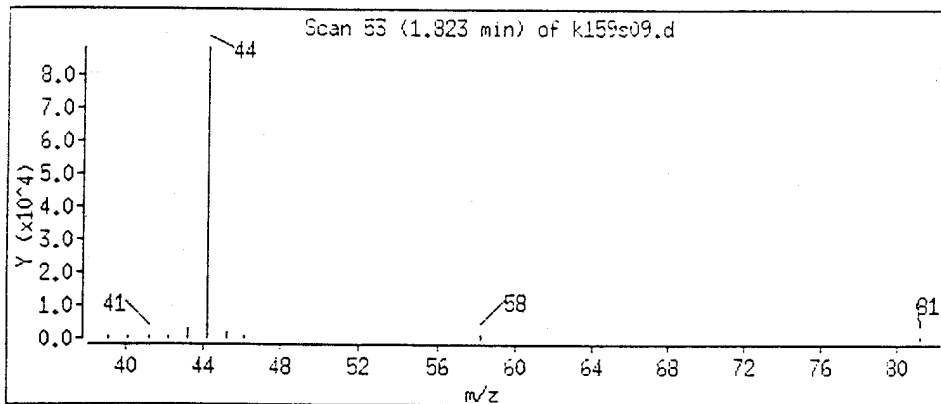
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

8 Acetone



2B
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: SPLHOUSTON Contract: _____
 Lab Code: SPL Case No.: 406119 SAS No.: _____ SDG No.: 406119
 Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
	=====	=====	=====	=====	=====	=====
01	A-01_BH_INT	102	100	94	0	0
02	A-01_BH_INT	100	100	94	0	0
03	A-02_BH_INT	104	112	94	0	0
04	A-02_BH_INT	100	100	92	0	0
05	A-03_BH_INT	112	92	92	0	0
06	A-03_BH_INT	114	92	92	0	0
07	A-04_BH_INT	102	102	96	0	0
08	A-04_BH_INT	106	98	96	0	0
09	A-05_BH_INT	118	86	98	0	0
10	A-05_BH_INT	100	102	98	0	0
11	A-06_BH_INT	116	88	96	0	0
12	A-06_BH_INT	100	100	98	0	0
13	A-07_BH_INT	114	88	98	0	0
14	A-07_BH_INT	106	98	94	0	0
15	VSBLK02	98	102	104	0	0
16	VSBLK02	100	102	100	0	0

QC LIMITS

SMC1 (TOL) = Toluene-d8 (84-138)
 SMC2 (BFB) = Bromofluorobenzene (59-113)
 SMC3 (DCE) = 1,2-Dichloroethane-d4 (70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3B
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPLHOUSTON Contract: _____

Lab Code: SPL Case No.: 406119 SAS No.: _____ SDG No.: 406119

Matrix Spike - EPA Sample No.: A-01_BH_INT_1 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.00	0	51.00	102	59-172
Trichloroethene	50.00	0	46.00	92	62-137
Benzene	50.00	0	47.00	94	66-142
Toluene	50.00	0	47.00	94	59-139
Chlorobenzene	50.00	0	46.00	92	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
1,1-Dichloroethene	50.00	54.00	108	6	22	59-172
Trichloroethene	50.00	46.00	92	0	24	62-137
Benzene	50.00	47.00	94	0	21	66-142
Toluene	50.00	47.00	94	0	21	59-139
Chlorobenzene	50.00	47.00	94	2	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: 8240S,9406119,,A-01 BH INT.1,L,S,9406119-11A,V,E,5.0G,
CAP,K165CC1,K165BF1,K165B02,,,,35/4-150@8,INST K,

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VSBLK02

Lab Name: SPLHOUSTON Contract: _____

Lab Code: SPL Case No.: 406119 SAS No.: _____ SDG No.: 406119

Lab File ID: K159B02 Lab Sample ID: VSBLK020608

Date Analyzed: 06/08/94 Time Analyzed: 1956

GC Column: CAP ID: _____ (mm) Heated Purge: (Y/N) Y

Instrument ID: K

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01	A-03_BH_INT	9406119-09A	K159S10	0022
02	A-03_BH_INT	9406119-10A	K159S11	0046
03	A-04_BH_INT	9406119-01A	K159S02	2109
04	A-04_BH_INT	9406119-02A	K159S03	2133
05	A-05_BH_INT	9406119-03A	K159S04	2157
06	A-05_BH_INT	9406119-04A	K159S05	2246
07	A-06_BH_INT	9406119-05A	K159S06	2310
08	A-06_BH_INT	9406119-06A	K159S07	2310
09	A-07_BH_INT	9406119-07A	K159S08	2334
10	A-07_BH_INT	9406119-08A	K159S09	2358

COMMENTS: SPL,BLANK,,VSBLK02,L,S,VSBLK020608,V,B,X1,
CAP,K159CC3,K159BF2,K159B02,,,,45/3-220@8,INST K,



SPL Blank QC Report

page 1

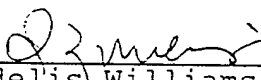
Matrix: Soil
Sample ID: VSBLK020608
Batch: VOK940608124900

Reported on: 06/16/94 15:45
Analyzed on: 06/08/94 19:56
Analyst: HLB

C o m p o u n d	Result	Detection Limit	Units
Chloromethane	ND	10	µg/Kg
Bromomethane	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Chloroethane	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
Acetone	24	10	µg/Kg
Carbon Disulfide		5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
Chloroform	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
2-Butanone	ND	20	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Benzene	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Bromoform	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
2-Hexanone	ND	10	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg

Notes

ND - Not detected.


Idelis Williams, QC Officer



SPL Blank QC Report

page 2

Matrix: Soil
Sample ID: VSBLK020608
Batch: VOK940608124900

Reported on: 06/16/94 15:45
Analyzed on: 06/08/94 19:56
Analyst: HLB

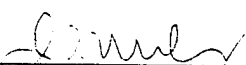
C o m p o u n d	Result	Detection Limit	Units
Styrene	ND	5	µg/Kg
Xylene (total)	ND	5	µg/Kg

S u r r o g a t e	Result	QC Criteria	Units
Toluene-d8	98	84-138	% Recovery
4-Bromofluorobenzene	102	59-113	% Recovery
1,2-Dichloroethane-d4	104	70-121	% Recovery

Samples in Batch 9406119-01 9406119-02 9406119-03 9406119-04
9406119-05 9406119-06 9406119-07 9406119-08
9406119-09 9406119-10

Notes

ND - Not detected.


Idelis Williams, QC Officer

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VSBLK02

Lab Name: SPLHOUSTON Contract: _____

Lab Code: SPL Case No.: 406119 SAS No.: _____ SDG No.: 406119

Lab File ID: K165B02 Lab Sample ID: VSBLK020614A

Date Analyzed: 06/14/94 Time Analyzed: 1211

GC Column: CAP ID: _____ (mm) Heated Purge: (Y/N) Y

Instrument ID: K

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
	=====	=====	=====	=====
01	A-01_BH_INT	9406119-11A	K165S01	1236
02	A-01_BH_INT	9406119-12A	K165S02	1350
03	A-02_BH_INT	9406119-13A	K165S03	1414
04	A-02_BH_INT	9406119-14A	K165S04	1236

COMMENTS: SPL,BLANK,,VSBLK02,L,S,VSBLK020614A,V,B,X1,
CAP,K165CC1,K165BF1,K165B02,,,,45/3-220@8,INST K,



SPL Blank QC Report

page 3

Matrix: Soil
Sample ID: VSBLK020614
Batch: VOK940614095800

Reported on: 06/16/94 15:45
Analyzed on: 06/14/94 12:11
Analyst: HLW

C o m p o u n d	Result	Detection Limit	Units
Chloromethane	ND	10	µg/Kg
Bromomethane	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Chloroethane	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
Acetone	ND	10	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
Chloroform	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
2-Butanone	ND	20	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Benzene	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Bromoform	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
2-Hexanone	ND	10	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg

Notes

ND - Not detected.

Idell's Williams
Idell's Williams, QC Officer



SPL Blank QC Report

page 4

Matrix: Soil
Sample ID: VSBLK020614
Batch: VOK940614095800

Reported on: 06/16/94 15:45
Analyzed on: 06/14/94 12:11
Analyst: HLW

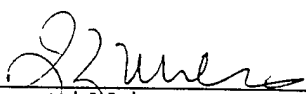
C o m p o u n d	Result	Detection Limit	Units
Styrene	ND	5	$\mu\text{g/Kg}$
Xylene (total)	ND	5	$\mu\text{g/Kg}$

S u r r o g a t e	Result	QC Criteria	Units
Toluene-d8	100	84-138	% Recovery
4-Bromofluorobenzene	102	59-113	% Recovery
1,2-Dichloroethane-d4	100	70-121	% Recovery

Samples in Batch 9406119-11 9406119-12 9406119-13 9406119-14

Notes

ND - Not detected.


Idelis Williams, QC Officer

Date : 08-JUN-94 12:49

Instrument : k.i

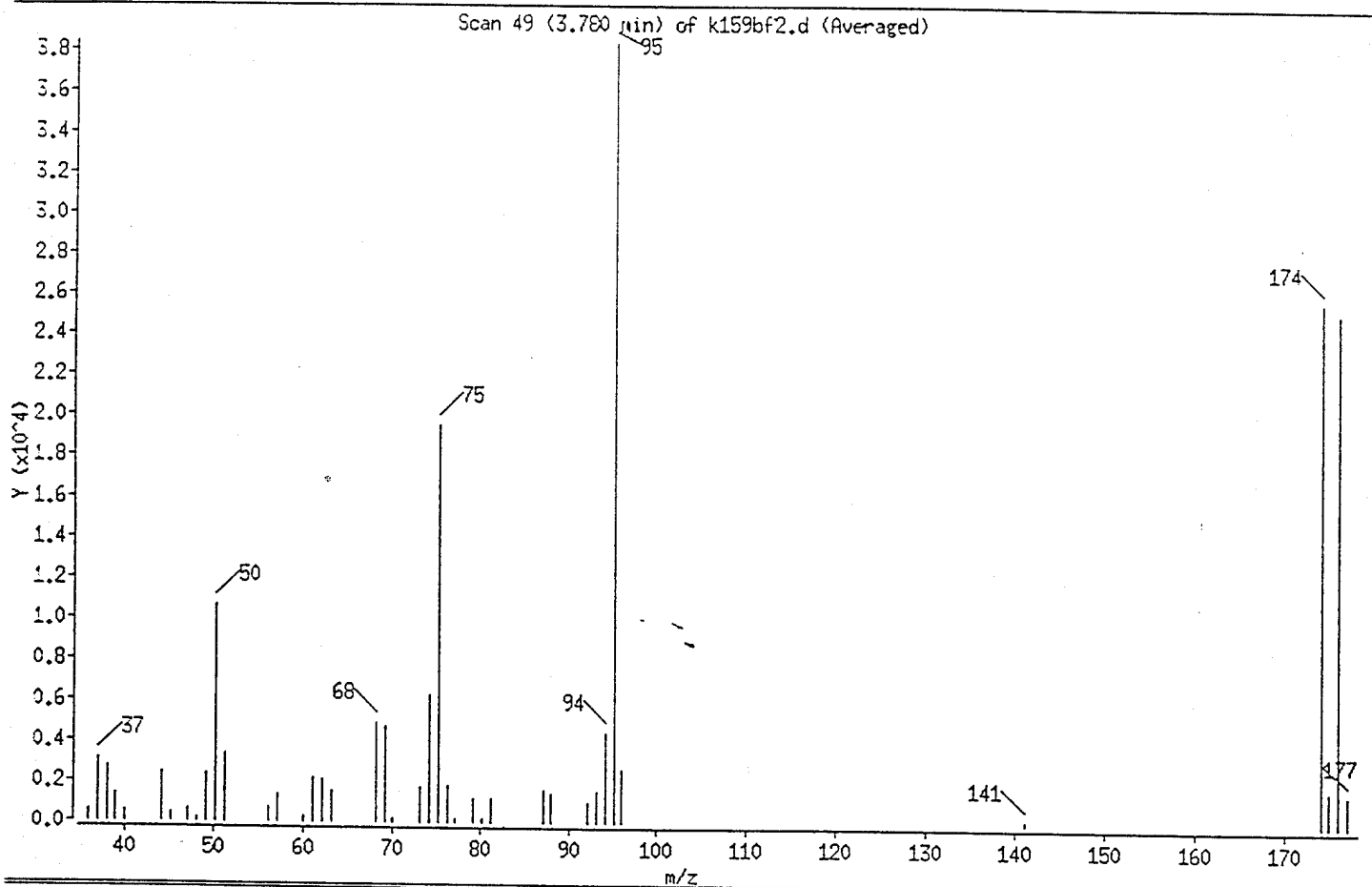
Sample ID :

Column phase :

Column diameter : 2.00

Volume Injected (uL) : 0.0

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.0
50	8.00 - 40.00% of mass 95	27.6
75	30.00 - 66.00% of mass 95	51.1
96	5.00 - 9.00% of mass 95	6.9
173	Less than 2.00% of mass 174	0.0
174	50.00 - 120.00% of mass 95	67.3
175	4.00 - 9.00% of mass 174	6.6
176	93.00 - 101.00% of mass 174	97.9
177	5.00 - 9.00% of mass 176	6.1

Date : 08-JUN-94 12:49

Instrument : k.i

Sample ID :

Column phase :

Column diameter : 2.00

Volume Injected (uL) : 0.0

Spectrum: Scans 49-51 (3.780 min), Subtraction Scan 47

Location of Maximum: 95.00

Number of points: 41

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	583	51.00	3357	74.00	6273	94.00	4450
37.00	3069	56.00	762	75.00	19614	95.00	38354
38.00	2734	57.00	1385	76.00	1853	96.00	2628
39.00	1349	60.00	244	77.00	175	141.00	176
40.00	41	61.00	2137	79.00	1182	174.00	25820
44.00	190	62.00	2110	80.00	190	175.00	1695
45.00	492	63.00	1514	81.00	1173	176.00	25289
47.00	674	68.00	4904	87.00	1658	177.00	1542
48.00	196	69.00	4730	88.00	1465		
49.00	2392	70.00	186	92.00	1006		
50.00	10567	73.00	1745	93.00	1542		

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i Injection Date: 08-JUN-1994 16:01
 Lab File ID: k159cc3.d Init. Calibration Date(s): 06/08/94 06/08/94
 Analysis Type: SOIL Init. Calibration Times: 16:01 16:28
 Lab Sample ID: Method File: /chem/k.i/k060894.b/kclps.m
 Quant Type: ISTD

COMPOUND	RRF	RF50	MIN	MAX
2 Chloromethane	2.565	3.041	0.010	18.6
3 Bromomethane	1.805	2.077	0.100	15.1
4 Vinyl Chloride	2.430	2.869	0.100	18.1
5 Chloroethane	1.492	1.688	0.010	13.1
6 Trichlorofluoromethane	2.337	2.679	0.010	14.6
7 Methylene Chloride	1.938	1.948	0.010	0.5
8 Acetone	1.333	0.826	0.010	38.0
9 Carbon Disulfide	6.351	6.976	0.010	9.8
10 1,1-Dichloroethene	1.720	1.909	0.100	11.0
11 1,1-Dichloroethane	3.924	4.216	0.200	7.4
12 trans-1,2-Dichloroethene	1.644	1.796	0.010	9.3
13 cis-1,2-Dichloroethene	1.805	1.968	0.010	9.0
M 14 1,2-Dichloroethene (total)	++++	++++	0.010	++++
15 Chloroform	3.935	3.875	0.200	1.5
\$ 16 1,2-Dichloroethane-d4	3.033	2.771	0.010	8.6
17 1,2-Dichloroethane	3.104	2.996	0.100	3.5
19 2-Butanone	0.277	0.177	0.010	36.0
20 1,1,1-Trichloroethane	0.421	0.420	0.100	0.3
21 Carbon Tetrachloride	0.371	0.379	0.100	2.2
22 Vinyl Acetate	0.103	0.152	0.010	47.5
23 Bromodichloromethane	0.385	0.365	0.200	5.2
24 1,2-Dichloropropane	0.334	0.315	0.010	5.6
25 cis-1,3-Dichloropropene	0.313	0.258	0.200	17.6
26 Trichloroethene	0.267	0.266	0.300	0.6
27 Benzene	1.102	1.098	0.500	0.3
28 Dibromochloromethane	0.247	0.217	0.100	12.1
29 trans-1,3-Dichloropropene	0.436	0.390	0.100	10.7
30 1,1,2-Trichloroethane	0.200	0.166	0.100	16.8
31 2-Chloroethylvinylether	0.615	0.602	0.010	2.0
32 Bromoform	0.142	0.114	0.100	19.9
34 4-Methyl-2-Pentanone	0.471	0.452	0.010	4.1
35 2-Hexanone	0.349	0.541	0.010	39.4
36 Tetrachloroethene	0.257	0.262	0.200	1.8
37 1,1,2,2-Tetrachloroethane	0.347	0.264	0.500	24.0
\$ 38 Toluene-d8	1.398	1.333	0.010	4.7
39 Toluene	0.820	0.803	0.400	2.1
40 Chlorobenzene	0.861	0.852	0.500	1.0
41 Ethylbenzene	0.479	0.478	0.100	0.2
\$ 42 Bromofluorobenzene	0.605	0.561	0.200	7.3
43 Styrene	0.599	0.541	0.300	9.7

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i Injection Date: 08-JUN-1994 16:01
Lab File ID: k159cc3.d Init. Calibration Date(s): 06/08/94 06/08/94
Analysis Type: SOIL Init. Calibration Times: 16:01 16:28
Lab Sample ID: Method File: /chem/k.i/k060894.b/kclps.m
Quant Type: ISTD

COMPOUND	RRF	RF50	MIN	MAX
			RRF	%D
44 m&p-Xylene	1.148	1.119	0.300	2.5
45 o-Xylene	0.545	0.540	0.300	0.9
M 46 Xylenes (total)	****	****	0.300	****

SPL Labs

Data file : /chem/k.i/k060894.b/k159cc3.d

Lab. Id. : Quant Type: ISTD
Inj Date : 08-JUN-1994 16:01 Autotune Date: {
Operator : Inst ID: k.i

Smp Info : 50 STD

Misc Info :

Comment :

Method : /chem/k.i/k060894.b/kclps.m

Meth Date : 09-Jun-1994 11:53 hillery

Cal Date : 08-JUN-1994 16:01

Als bottle: 8

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: SOIL

Cal File: k159cc3.d

Continuing Calibration Sample

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG MASS	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ng)	FINAL (ug/Kg)
-----	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.521	(1.000)	62390	50	
2 Chloromethane	50.00	1.612	(0.639)	189744	59	59
3 Bromomethane	94.00	1.702	(0.675)	129573	58	58
4 Vinyl Chloride	62.00	1.657	(0.657)	179003	59	59
5 Chloroethane	64.00	1.718	(0.681)	105308	57	57
6 Trichlorofluoromethane	101.00	1.839	(0.729)	167124	57	57
7 Methylene Chloride	84.00	1.975	(0.784)	121505	50	50
8 Acetone	43.00	1.809	(0.717)	51554	31	31
9 Carbon Disulfide	76.00	2.036	(0.808)	435211	55	55
10 1,1-Dichloroethene	96.00	1.930	(0.766)	119114	56	56
11 1,1-Dichloroethane	63.00	2.203	(0.874)	263046	54	54
12 trans-1,2-Dichloroethene	96.00	2.127	(0.844)	112064	55	55
13 cis-1,2-Dichloroethene	96.00	2.445	(0.970)	122778	55	55
15 Chloroform	83.00	2.521	(1.000)	241773	49	49
S 16 1,2-Dichloroethane-d4	65.00	2.824	(1.120)	172880	46	46
17 1,2-Dichloroethane	62.00	2.869	(1.138)	186903	48	48
* 18 1,4-Difluorobenzene	114.00	3.339	(1.000)	436788	50	
19 2-Butanone	43.00	2.339	(0.700)	77459	32	32
20 1,1,1-Trichloroethane	97.00	2.854	(0.855)	183384	50	50
21 Carbon Tetrachloride	117.00	3.066	(0.913)	165687	51	51
22 Vinyl Acetate	43.00	2.218	(0.664)	66280	74	74
23 Bromodichloromethane	83.00	3.824	(1.145)	159271	47	47
24 1,2-Dichloropropane	63.00	3.672	(1.100)	137753	47	47
25 cis-1,3-Dichloropropene	75.00	5.354	(1.604)	112828	41	41
26 Trichloroethene	130.00	3.687	(1.104)	115992	50	50
27 Benzene	78.00	3.036	(0.909)	479791	50	50
28 Dibromochloromethane	129.00	6.097	(1.826)	94717	44	44
29 trans-1,3-Dichloropropene	75.00	4.657	(1.395)	170245	45	45
30 1,1,2-Trichloroethane	97.00	5.491	(1.644)	72689	42	42

SPL Labs

Data file : /chem/k.i/k060894.b/k159s07.d
Lab. Id. :
Inj Date : 08-JUN-1994 23:10 Quant Type: ISTD
Operator : Autotune Date: {
Smp Info : 9406119-8240S-06A X1 Inst ID: k.i
Misc Info :
Comment :
Method : /chem/k.i/k060894.b/kc1ps.m
Meth Date : 09-Jun-1994 11:53 hillery
Cal Date : 08-JUN-1994 16:01 Cal File: k159cc3.d
Als bottle: 24
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/Kg)
*****	****		**	*****	*****	*****
* 1 Bromochloromethane	128.00	2.520	(1.000)	43566	50	(Q)
8 Acetone	43.00	1.823	(0.723)	14323	20	20 <i>HOW</i>
\$ 16 1,2-Dichloroethane-d4	65.00	2.838	(1.126)	119008	49	49
* 18 1,4-Difluorobenzene	114.00	3.338	(1.000)	291190	50	
* 33 Chlorobenzene-d5	117.00	7.444	(1.000)	241989	50	
\$ 38 Toluene-d8	98.00	5.247	(0.705)	321285	50	50
\$ 42 Bromofluorobenzene	95.00	9.520	(1.279)	136149	50	50

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	49	98.58	70-121
\$ 38 Toluene-d8	50	50	99.62	84-138
\$ 42 Bromofluorobenzene	50	50	100.35	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159s07.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kc1ps.m
Misc Info:

Calibration Date: 06/08/94
Calibration Time: 1601
Sample Type: SOIL
Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	62390	31195	124780	43566	-30.17
18 1,4-Difluorobenzene	436788	218394	873576	291190	-33.33
33 Chlorobenzene-d5	349737	174868	699474	241989	-30.81

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.52	-0.05
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	-0.03
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159s07.d

Date : 08-JUN-1994 23:10

Instrument : I.i

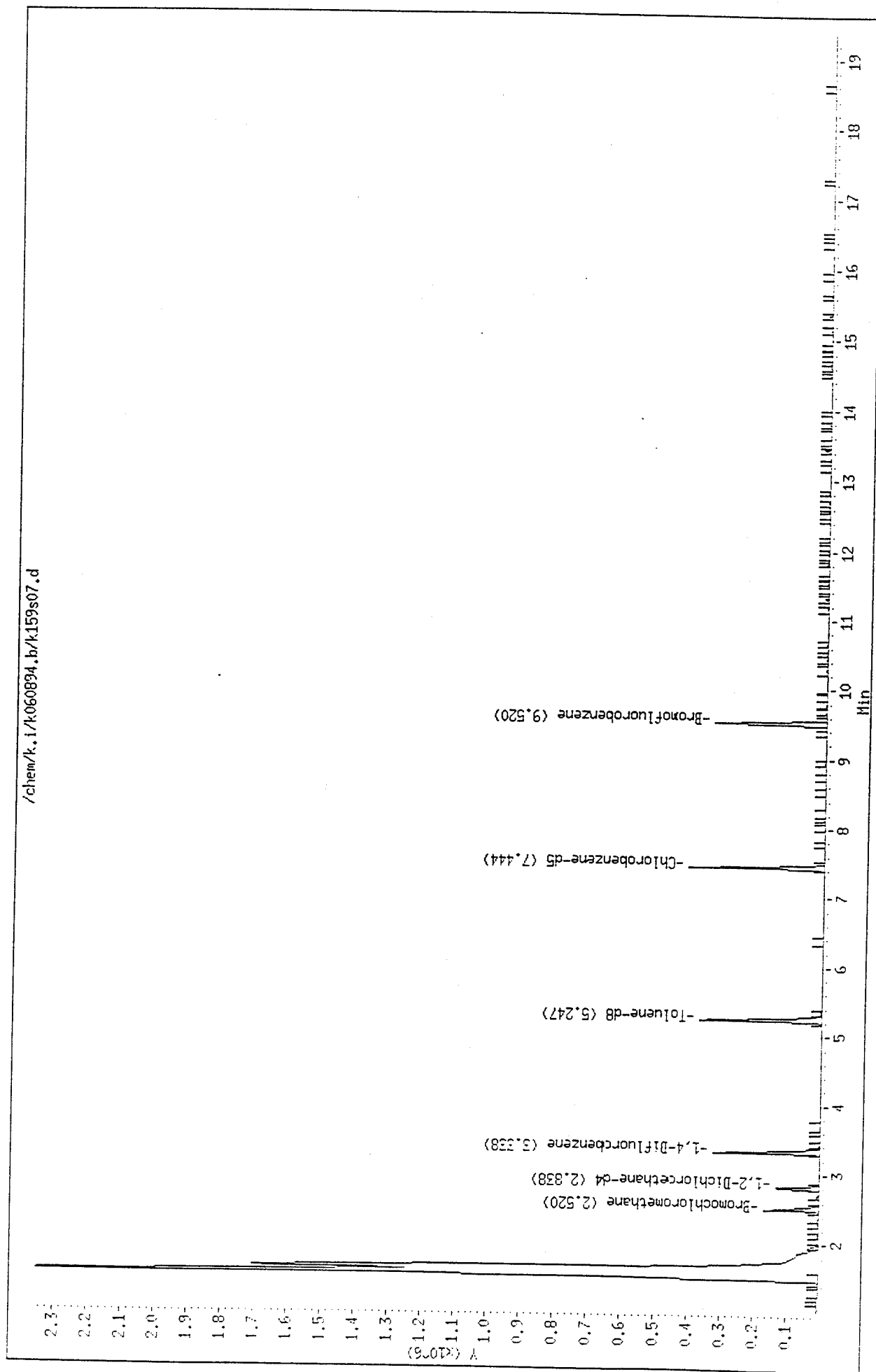
Sample ID :

Column phase :

Volume Injected (uL) : 0.0

Column diameter : 0.25

/chem/k.i/k060894.b/k159s07.d



Date : 08-JUN-1994 23:10

Instrument : k.i

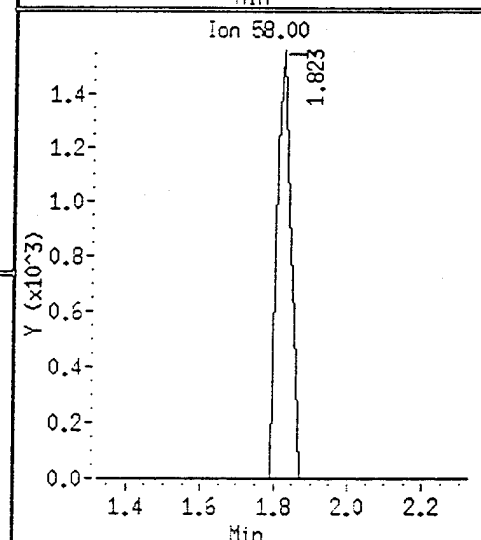
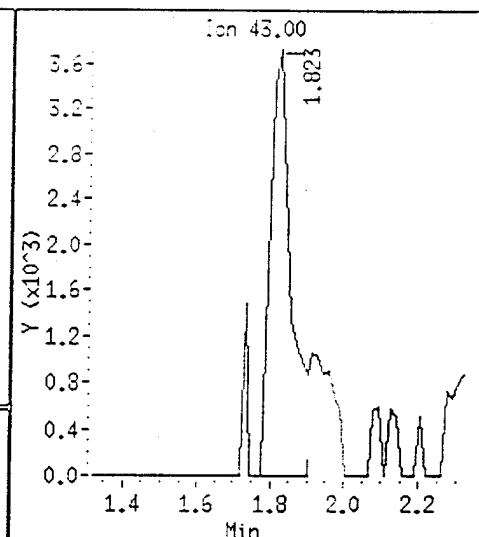
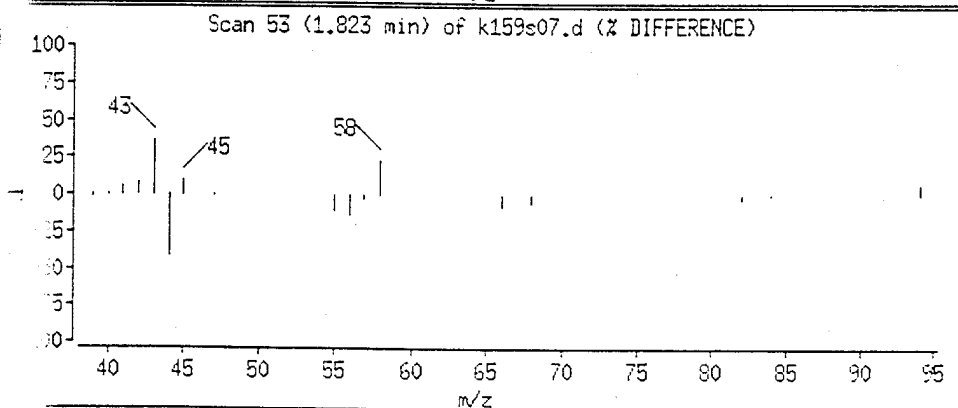
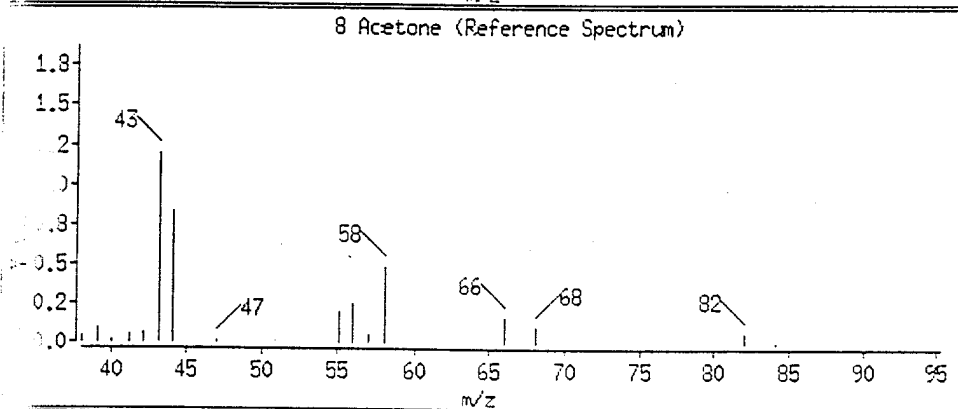
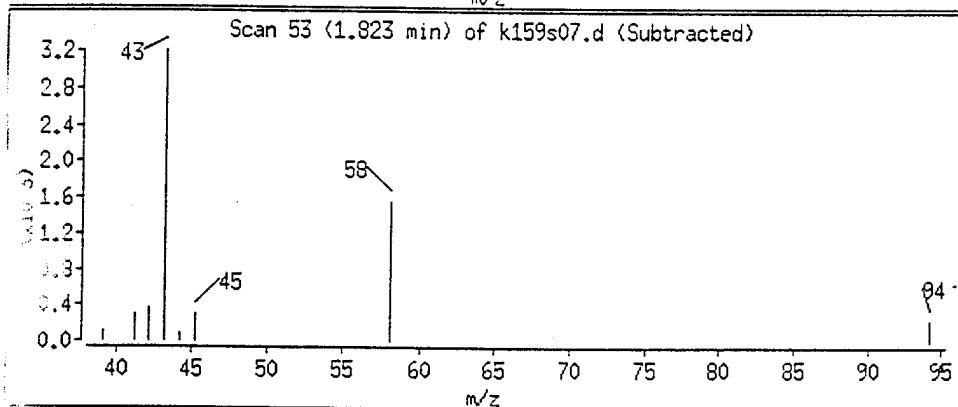
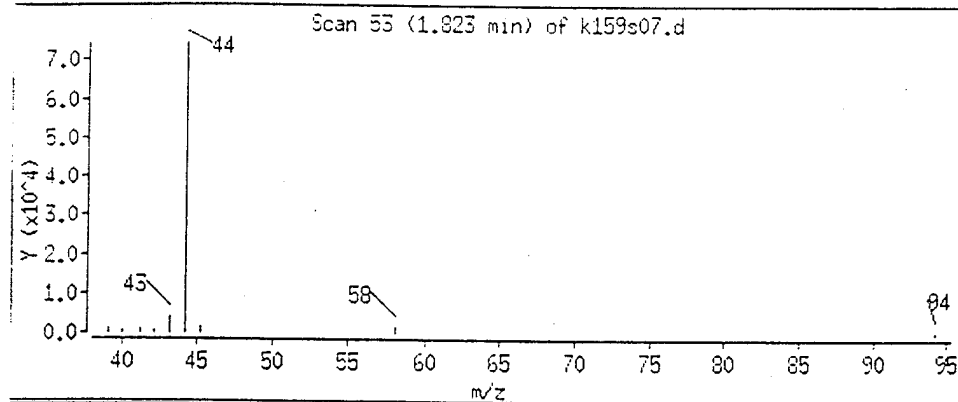
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

8 Acetone





Certificate of Analysis No. 9406119-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:00:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acetone	B 19	10	µg/Kg
Benzene	ND	5	µg/Kg
Bromodichloromethane	ND	5	µg/Kg
Bromoform	ND	5	µg/Kg
Bromomethane	ND	10	µg/Kg
2-Butanone	ND	20	µg/Kg
Carbon Disulfide	ND	5	µg/Kg
Carbon Tetrachloride	ND	5	µg/Kg
Chlorobenzene	ND	5	µg/Kg
Chloroethane	ND	10	µg/Kg
2-Chloroethylvinylether	ND	10	µg/Kg
Chloroform	ND	5	µg/Kg
Chloromethane	ND	10	µg/Kg
Dibromochloromethane	ND	5	µg/Kg
1,1-Dichloroethane	ND	5	µg/Kg
1,1-Dichloroethene	ND	5	µg/Kg
1,2-Dichloroethane	ND	5	µg/Kg
total-1,2-Dichloroethene	ND	5	µg/Kg
1,2-Dichloropropane	ND	5	µg/Kg
cis-1,3-Dichloropropene	ND	5	µg/Kg
trans-1,3-Dichloropropene	ND	5	µg/Kg
Ethylbenzene	ND	5	µg/Kg
2-Hexanone	ND	10	µg/Kg
Methylene Chloride	ND	5	µg/Kg
4-Methyl-2-Pentanone	ND	10	µg/Kg
Styrene	ND	5	µg/Kg
1,1,2,2-Tetrachloroethane	ND	5	µg/Kg
Tetrachloroethene	ND	5	µg/Kg
Toluene	ND	5	µg/Kg
1,1,1-Trichloroethane	ND	5	µg/Kg
1,1,2-Trichloroethane	ND	5	µg/Kg
Trichloroethene	ND	5	µg/Kg
Trichlorofluoromethane	ND	5	µg/Kg
Vinyl Acetate	ND	10	µg/Kg
Vinyl Chloride	ND	10	µg/Kg
Xylenes (total)	ND	5	µg/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-07

Operational Tech

SAMPLE ID: A-07 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	

ANALYZED BY: HLW

DATE/TIME: 06/08/94 23:34:00

METHOD: 8240, Volatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

B = Compound present in Method Blank

D - Surr. diluted out.

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Data File: /chem/k.i/k060894.b/k159s08.d
Report Date: 09-Jun-1994 11:54

Page 1

SPL Labs

Data file : /chem/k.i/k060894.b/k159s08.d

Lab. Id. :

Inj Date : 08-JUN-1994 23:34

Operator :

Smp Info : 9406119-8240S-07A X1

Misc Info :

Comment :

Method : /chem/k.i/k060894.b/kclips.m

Meth Date : 09-Jun-1994 11:53 hillery

Cal Date : 08-JUN-1994 16:01

Als bottle: 25

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: SOIL

Quant Type: ISTD

Autotune Date: {

Inst ID: k.i

Cal File: k159cc3.d

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN: FINAL (ng) (ug/Kg)
*****	----		==	=====	-----	-----
* 1 Bromochloromethane	128.00	2.520	(1.000)	50280	50	(Q) <i>habw</i>
8 Acetone	43.00	1.823	(0.723)	15947	19	19
\$ 16 1,2-Dichloroethane-d4	65.00	2.938	(1.126)	136960	49	49
* 19 1,4-Difluorobenzene	114.00	3.338	(1.000)	374344	50	
* 33 Chlorobenzene-d5	117.00	7.444	(1.000)	267379	50	
\$ 38 Toluene-d8	98.00	5.247	(0.705)	405080	57	57
\$ 42 Bromofluorobenzene	95.00	9.520	(1.279)	131871	44	44

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	49	98.30	70-121
\$ 38 Toluene-d8	50	57	113.67	84-138
\$ 42 Bromofluorobenzene	50	44	87.97	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159s08.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

Calibration Date: 06/08/94
Calibration Time: 1601
Sample Type: SOIL
Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	62390	31195	124780	50280	-19.41
18 1,4-Difluorobenzene	436788	218394	873576	374344	-14.30
33 Chlorobenzene-d5	349737	174868	699474	267379	-23.55

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
1 Bromochloromethane	2.52	2.02	3.02	2.52	-0.04
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	-0.03
33 Chlorobenzene-d5	7.45	6.95	7.95	7.44	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Date : 08-JUN-1994 23:34

Instrument : k.1

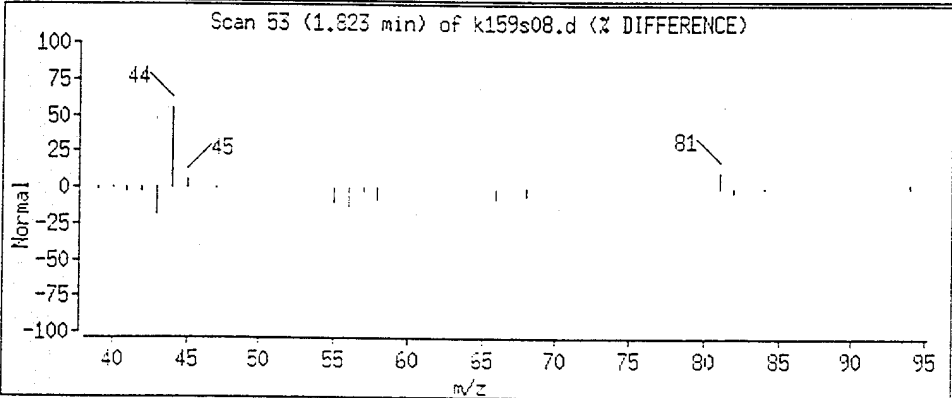
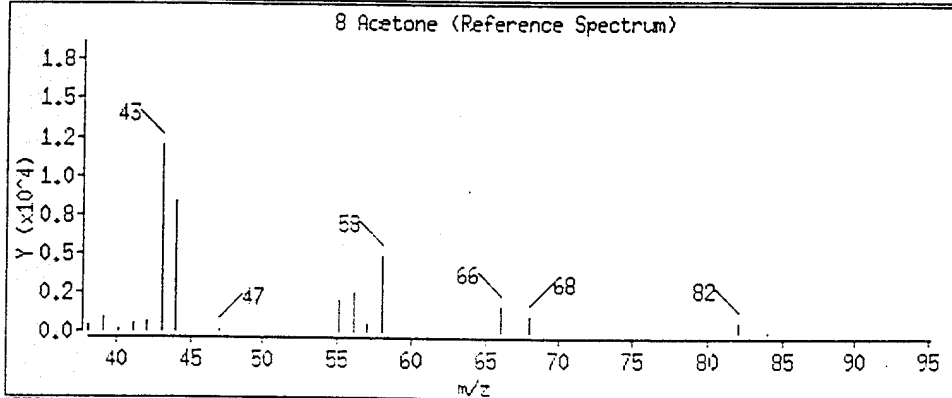
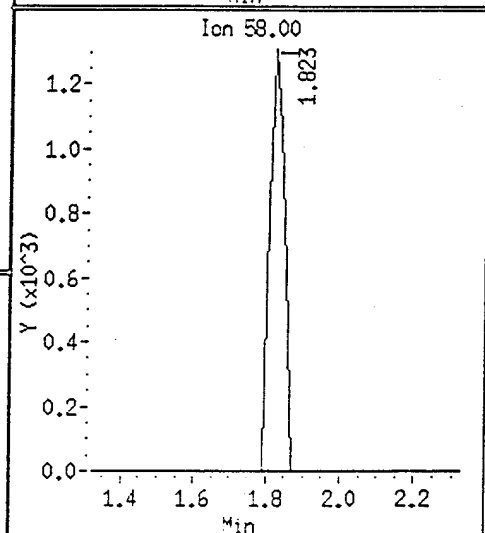
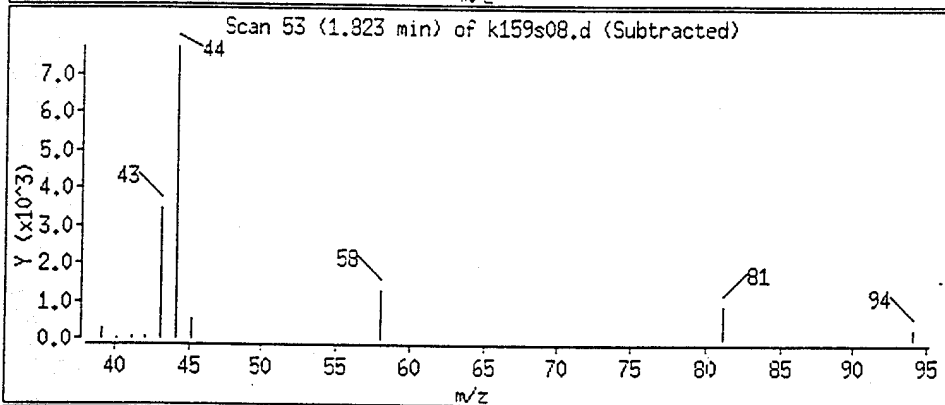
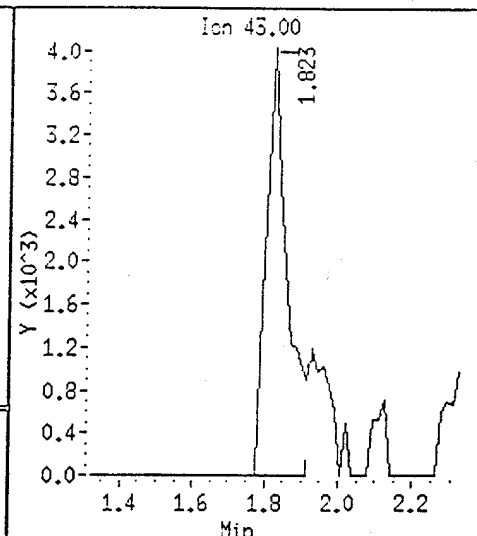
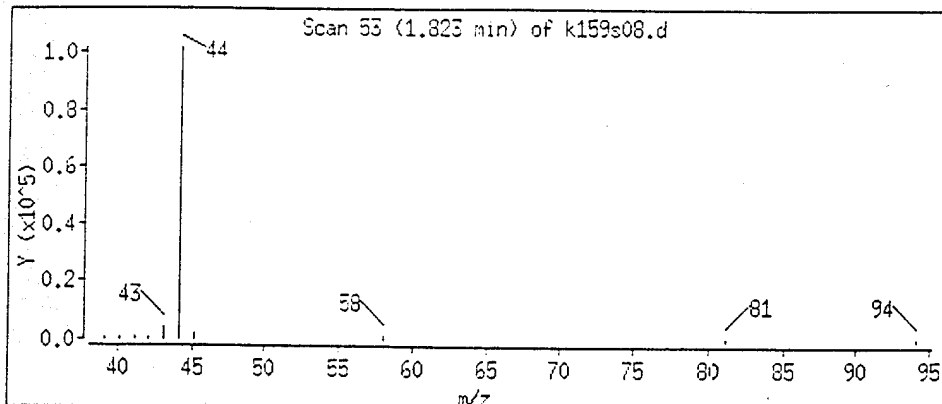
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.1

8 Acetone



Data File: /chem/k.i/k060894.b/k159s08.d

Date : 08-11-1994 23:34

Instrument : k.i.i

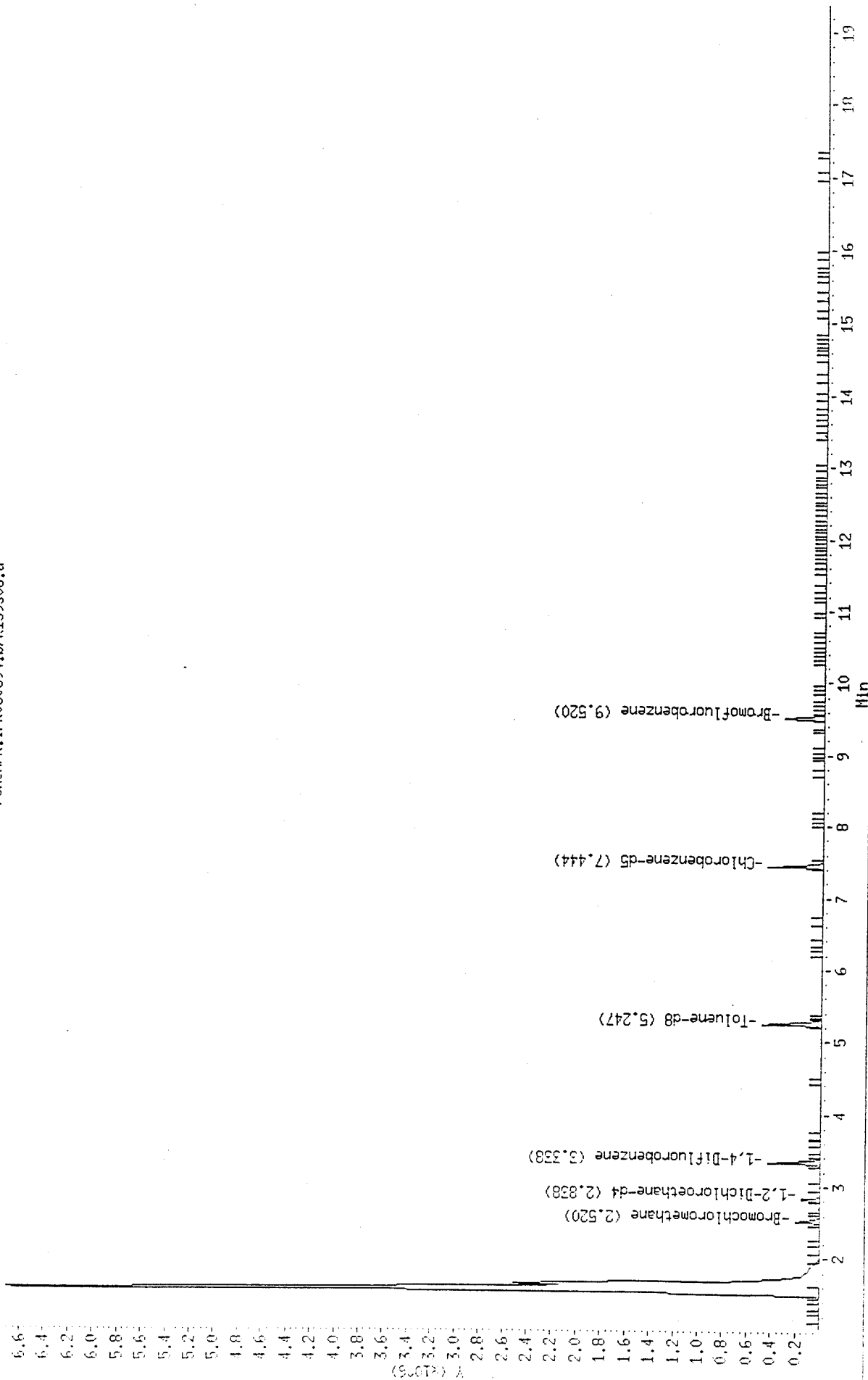
Sample ID :

Column phase :

Volume Injected (ul) : 0.0

Column diameter : 0.25

/chem/k.i/k060894.b/k159s08.d



Compounds	QUANT SIG		RT	REL RT	RESPONSE	CONCENTRATIONS	
	MASS					ON-COLUMN	FINAL
						(ng)	(ug/Kg)
-----	----	--	-----	-----	-----	-----	-----
31 2-Chloroethylvinylether	63.00		2.203	(0.660)	263046	49	49
32 Bromoform	173.00		8.506	(2.547)	49628	40	40
* 33 Chlorobenzene-d5	117.00		7.445	(1.000)	349737	50	
34 4-Methyl-2-Pentanone	43.00		4.733	(0.636)	157938	48	48
35 2-Hexanone	43.00		6.066	(0.815)	189242	77	77
36 Tetrachloroethene	164.00		6.491	(0.872)	91570	51	51
37 1,1,2,2-Tetrachloroethane	83.00		9.263	(1.244)	92365	38	38
\$ 38 Toluene-d8	98.00		5.248	(0.705)	466127	48	48
39 Toluene	92.00		5.339	(0.717)	280715	49	49
40 Chlorobenzene	112.00		7.491	(1.006)	298104	49	49
41 Ethylbenzene	106.00		7.915	(1.063)	167141	50	50
\$ 42 Bromofluorobenzene	95.00		9.521	(1.279)	196076	46	46
43 Styrene	104.00		8.688	(1.167)	189137	45	45
44 m&p-Xylene	106.00		8.127	(1.092)	391490	49	49
45 o-Xylene	106.00		8.733	(1.173)	188893	50	50

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159cc3.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclips.m
Misc Info:

Calibration Date: 06/08/94
Calibration Time: 1601
Sample Type: SCIL
Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
=====	=====	=====	=====	=====	=====
1 Bromochloromethane	62390	31195	124780	62390	0.00
18 1,4-Difluorobenzene	436788	218394	873576	436788	0.00
33 Chlorobenzene-d5	349737	174868	699474	349737	0.00

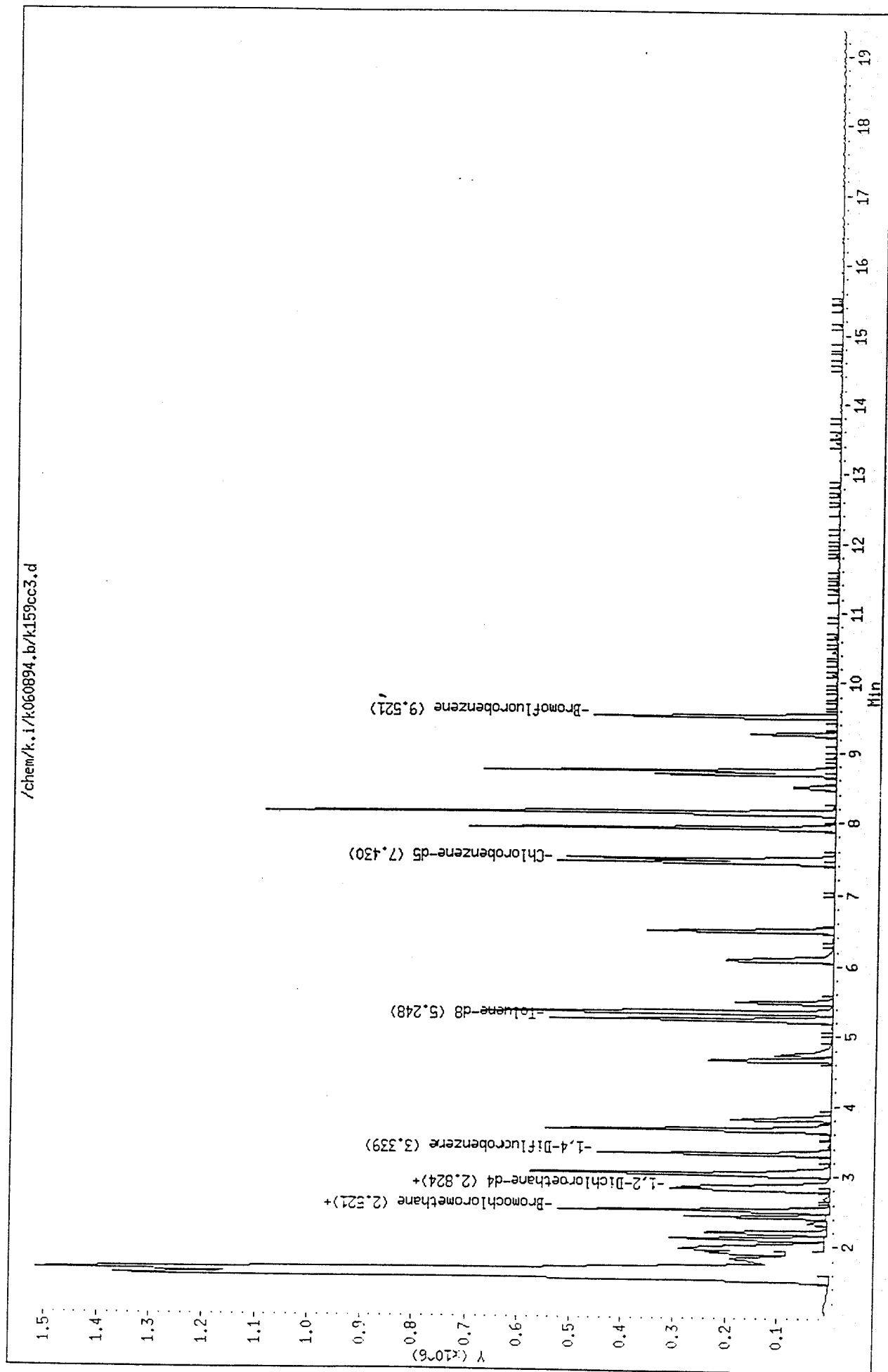
COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
=====	=====	=====	=====	=====	=====
1 Bromochloromethane	2.52	2.02	3.02	2.52	0.00
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.34	0.00
33 Chlorobenzene-d5	7.45	6.95	7.95	7.45	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k060894.b/k159cc3.d
Date : 08-JUN-1994 16:01
Instrument : k.i
Sample ID :
Column phase :
Volume Injected (uL) : 0.0

Page 4

Column diameter : 0.25



SPL Labs

Data file : /chem/k.i/k060894.b/k159b02.d
Lab. Id. : Quant Type: ISTD
Inj Date : 08-JUN-1994 19:56 Autotune Date: {
Operator : Inst ID: k.i
Smp Info : METHOD BLANK
Misc Info :
Comment :
Method : /chem/k.i/k060894.b/kclps.m
Meth Date : 09-Jun-1994 11:53 hillery
Cal Date : 08-JUN-1994 16:01 Cal File: k159cc3.d
Als bottle: 16
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/Kg)
*****	----	--	-----	-----	-----	-----
* 1 Bromochloromethane	128.00	2.534	(1.000)	70363	50	(Q)
8 Acetone	43.00	1.922	(0.719)	27816	24	24 HLBW
\$ 16 1,2-Dichloroethane-d4	65.00	2.837	(1.120)	202877	52	52
* 18 1,4-Difluorobenzene	114.00	3.353	(1.000)	392626	50	
* 33 Chlorobenzene-d5	117.00	7.459	(1.000)	326424	50	
\$ 38 Toluene-d8	98.00	5.262	(0.705)	429469	49	49
\$ 42 Bromofluorobenzene	95.00	9.520	(1.276)	188131	51	51

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k060894.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k060894.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	52	104.05	70-121
\$ 38 Toluene-d8	50	49	98.72	84-138
\$ 42 Bromofluorobenzene	50	51	102.80	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k159b02.d
Lab Sample ID:

Analysis Type: VOA

Quant Type: ISTD

Method File: /chem/k.i/k060894.b/kclps.m

Misc Info:

Calibration Date: 06/08/94

Calibration Time: 1601

Sample Type: SOIL

Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	62390	31195	124780	70363	12.78
18 1,4-Difluorobenzene	436788	218394	873576	392626	-10.11
33 Chlorobenzene-d5	349737	174868	699474	326424	-6.67

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	2.52	2.02	3.02	2.53	0.55
18 1,4-Difluorobenzene	3.34	2.84	3.84	3.35	0.41
33 Chlorobenzene-d5	7.45	6.95	7.95	7.46	0.18

AREA UPPER LIMIT = +100% of internal standard area.

AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT.

RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Date : 08-JUN-1994 19:56

Instrument : k.i

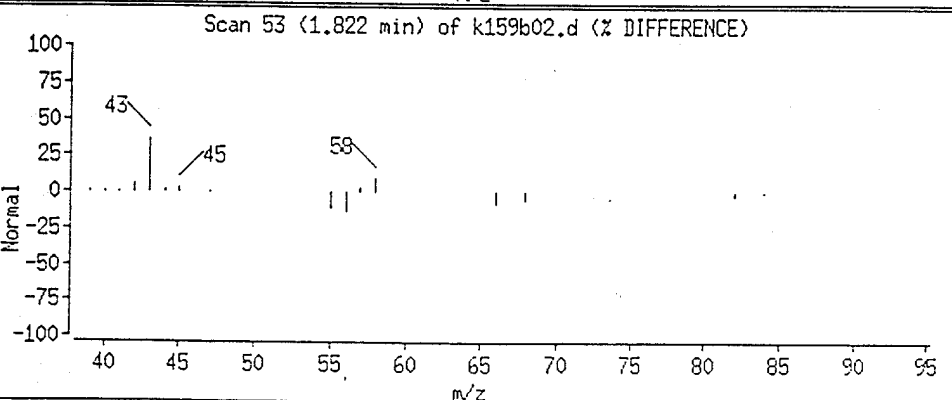
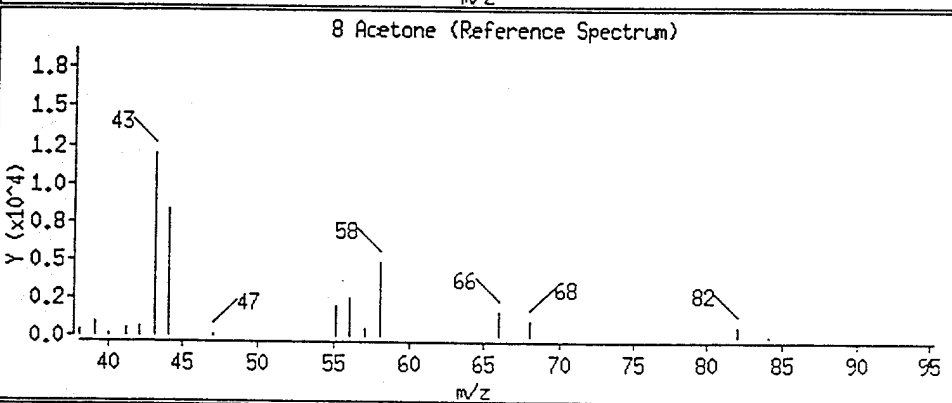
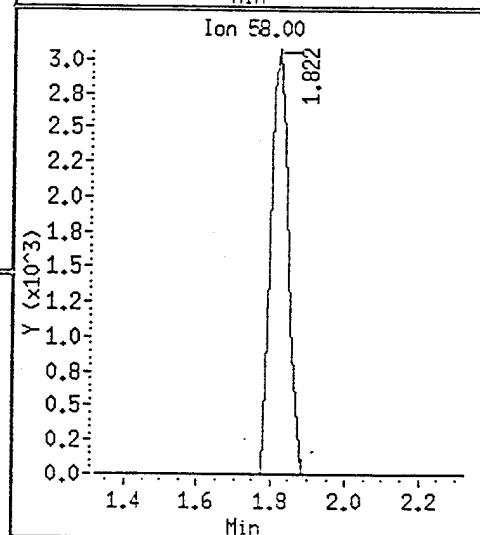
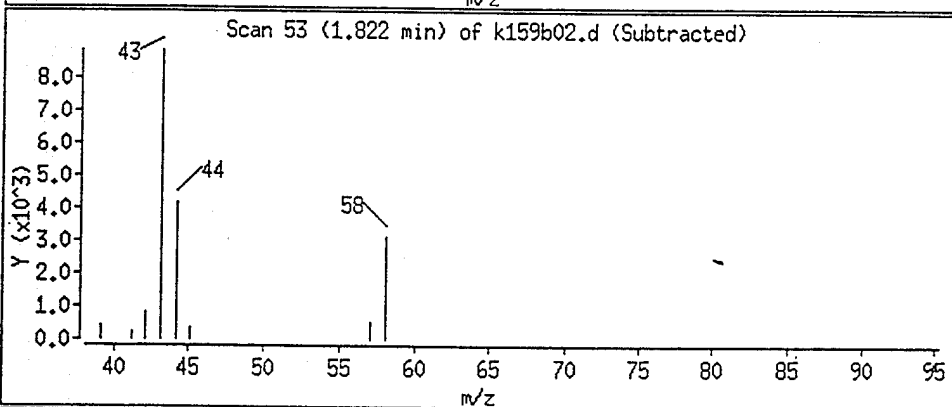
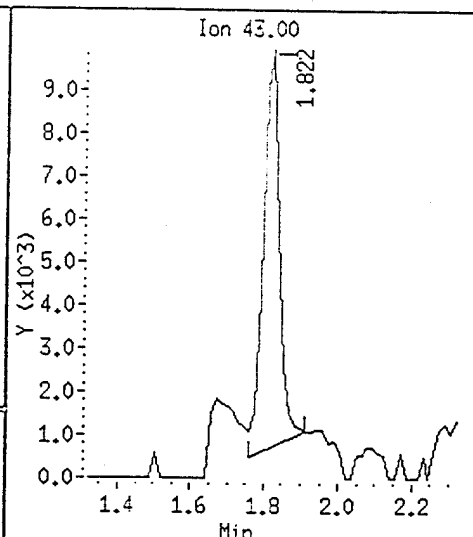
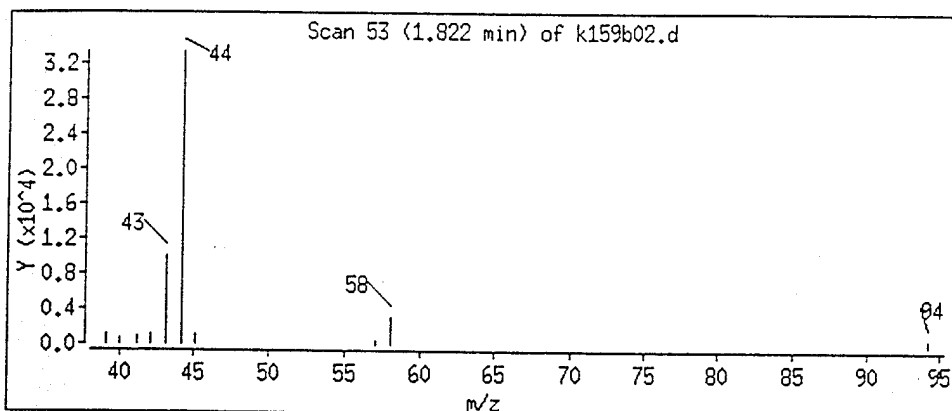
Sample ID :

Column phase :

Column diameter : 0.25

Volume Injected (uL) : 0.0

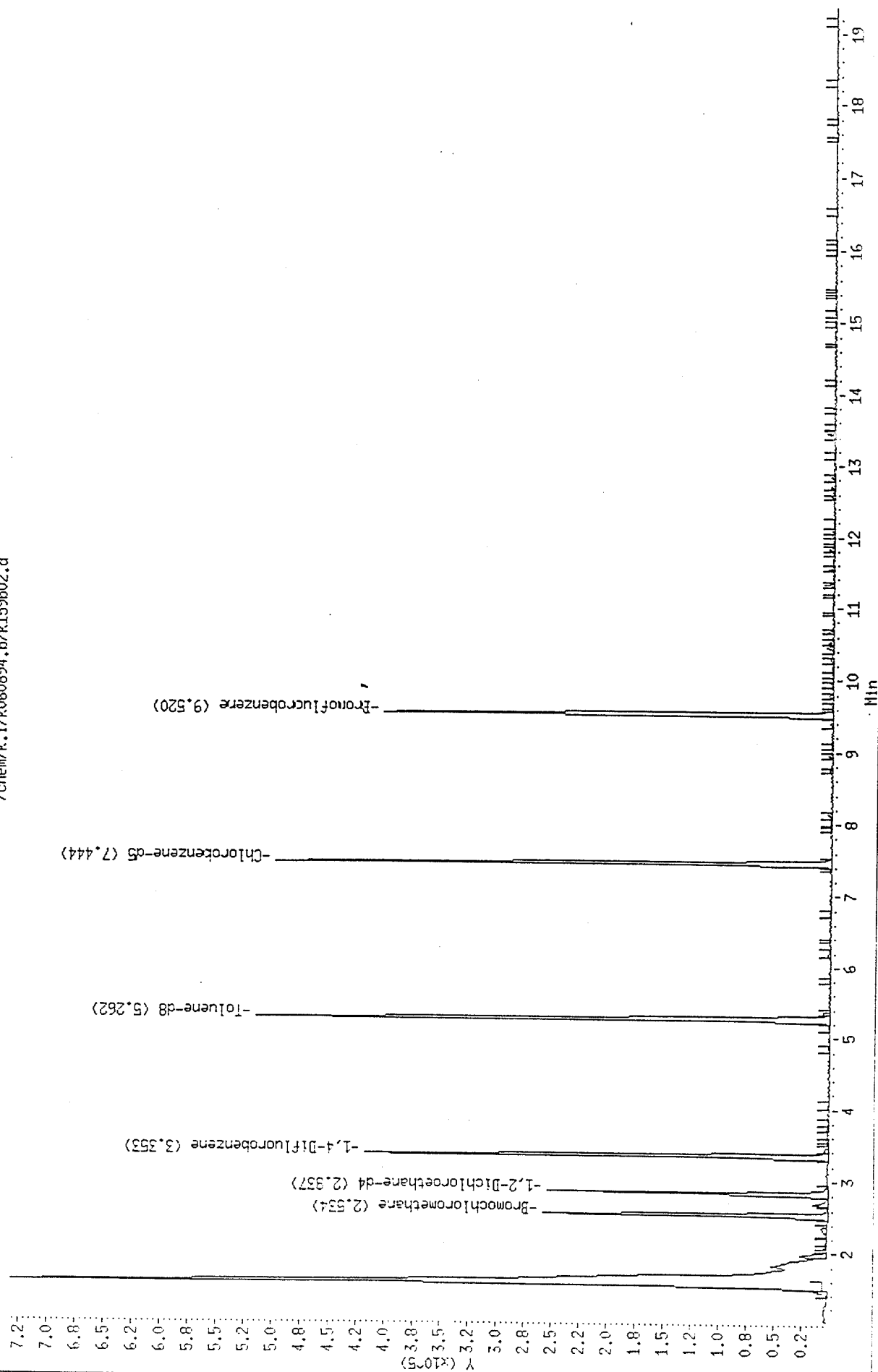
8 Acetone



Data File: /chem/k.i/k060894.b/k159b02.d
Date : 08-JUN-1994 19:56
Instrument : k.i
Sample ID :
Column phase :
Volume Injected (uL) : 0.0

Column diameter : 0.25

/chem/k.i/k060894.b/k159b02.d



Data File: /chem/k.i/k061494.b/k165bf1.d

Page 1

Date : 14-JUN-94 09:58

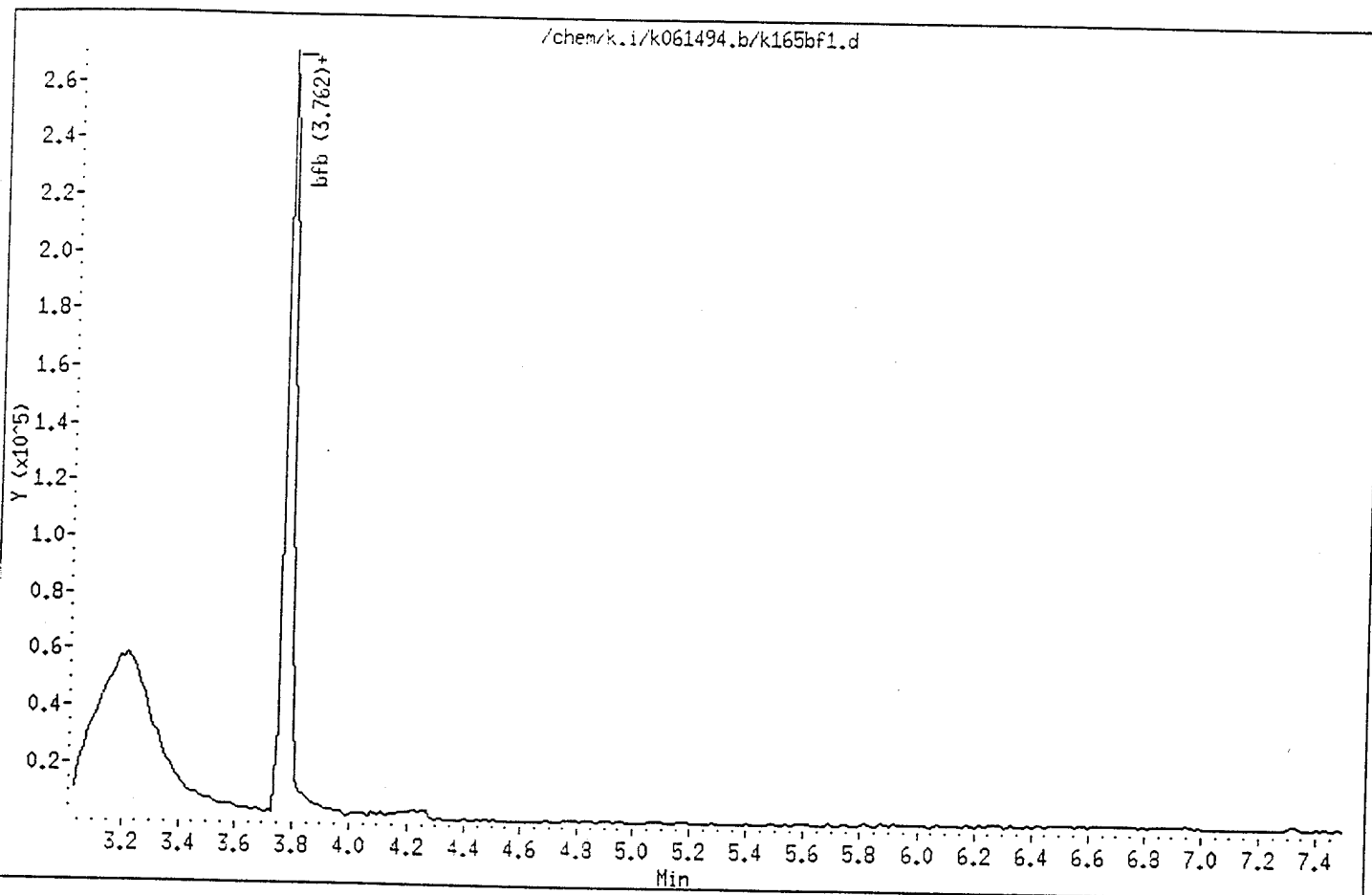
Instrument : k.i

Sample ID :

Column phase :

Column diameter : 2.00

Volume Injected (uL) : 0.0



Date : 14-JUN-94 09:58

Instrument : k.i

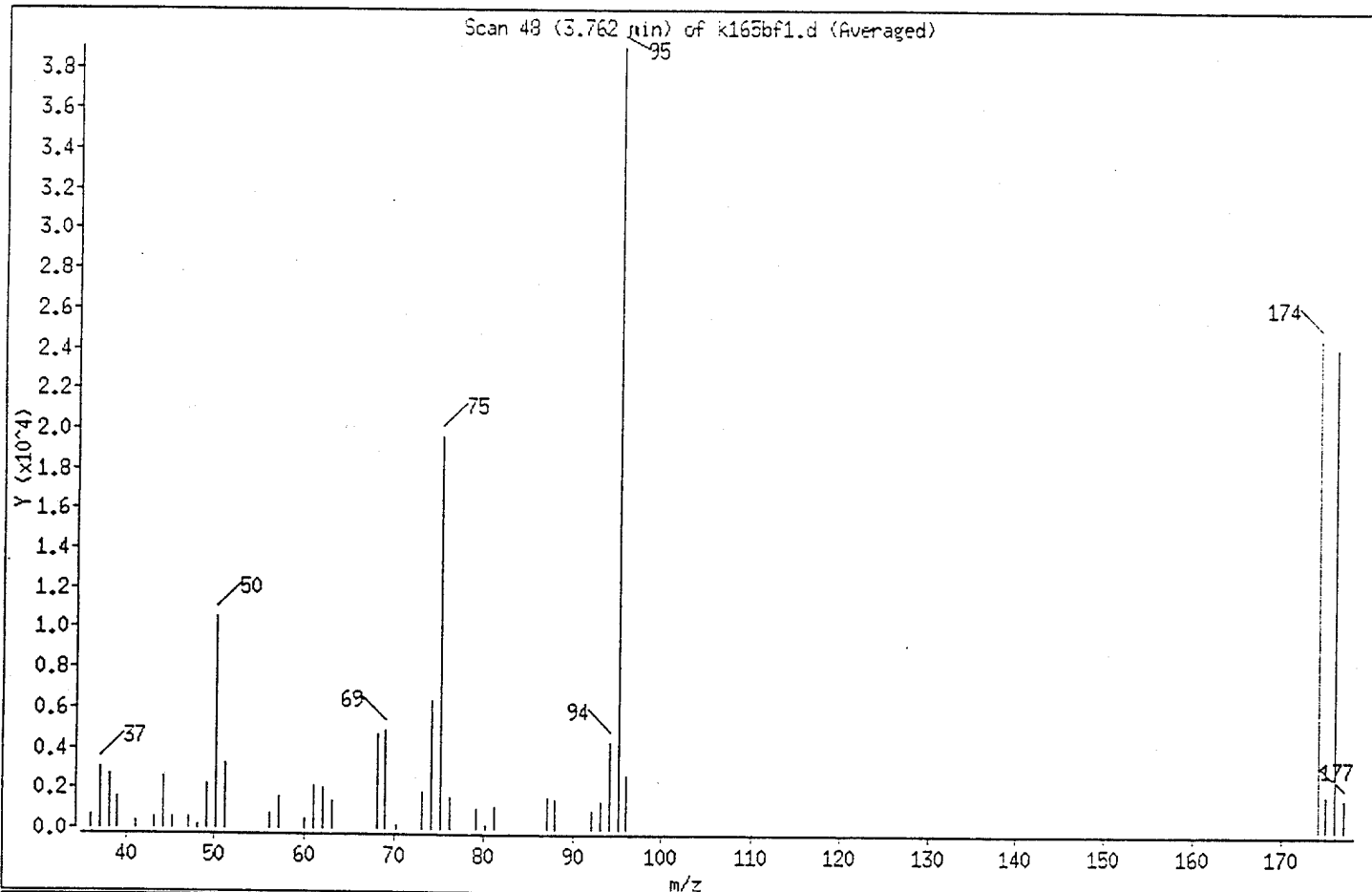
Sample ID :

Column phase :

Column diameter : 2.00

Volume Injected (uL) : 0.0

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.0
50	8.00 - 40.00% of mass 95	26.9
75	30.00 - 66.00% of mass 95	50.3
96	5.00 - 9.00% of mass 95	6.9
173	Less than 2.00% of mass 174	0.0
174	50.00 - 120.00% of mass 95	63.1
175	4.00 - 9.00% of mass 174	7.0
176	93.00 - 101.00% of mass 174	98.1
177	5.00 - 9.00% of mass 176	6.4

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i
Lab File ID: k165cc1.d
Analysis Type: SOIL
Lab Sample ID:
Quant Type: ISTD

Injection Date: 14-JUN-1994 10:26
Init. Calibration Date(s): 05/19/94 05/19/94
Init. Calibration Times: 16:32 23:28
Method File: /chem/k.i/k061494.b/kclps.m

COMPOUND	RRF	RF50	MIN RRF	MAX %D
1 Chloromethane	3.668	2.731	0.010	25.5
2 Bromomethane	2.216	1.814	0.100	18.2
4 Vinyl Chloride	3.332	2.632	0.100	21.0
5 Chloroethane	1.870	2.270	0.010	21.4
6 Trichlorofluoromethane	3.108	2.064	0.010	33.6
7 Methylene Chloride	2.099	1.857	0.010	11.5
8 Acetone	2.520	0.462	0.010	81.7
9 Carbon Disulfide	6.641	6.455	0.010	2.8
10 1,1-Dichloroethene	1.837	1.583	0.100	13.8
11 1,1-Dichloroethane	3.929	3.348	0.200	14.8
12 trans-1,2-Dichloroethene	1.678	1.552	0.010	7.5
13 cis-1,2-Dichloroethene	1.814	1.734	0.010	4.4
M 14 1,2-Dichloroethene (total)	++++	++++	0.010	++++
15 Chloroform	3.729	3.083	0.200	17.3
S 16 1,2-Dichloroethane-d4	2.851	2.812	0.010	1.4
17 1,2-Dichloroethane	3.640	2.910	0.100	20.1
19 2-Butanone	0.458	0.232	0.010	49.4
20 1,1,1-Trichloroethane	0.491	0.402	0.100	18.0
21 Carbon Tetrachloride	0.434	0.335	0.100	22.8
22 Vinyl Acetate	1.309	1.116	0.010	14.7
23 Bromodichloromethane	0.435	0.391	0.200	10.1
24 1,2-Dichloropropane	0.355	0.338	0.010	4.8
25 cis-1,3-Dichloropropene	0.489	0.433	0.200	11.3
26 Trichloroethene	0.270	0.257	0.300	4.7
27 Benzene	1.164	1.092	0.500	6.1
28 Dibromochloromethane	0.273	0.262	0.100	3.9
29 trans-1,3-Dichloropropene	0.504	0.464	0.100	7.9
30 1,1,2-Trichloroethane	0.214	0.213	0.100	0.5
31 2-Chloroethylvinylether	0.642	0.556	0.010	13.4
32 Bromoform	0.166	0.163	0.100	1.9
34 4-Methyl-2-Pentanone	0.751	0.547	0.010	27.2
35 2-Hexanone	0.772	0.417	0.010	46.0
36 Tetrachloroethene	0.251	0.239	0.200	4.9
37 1,1,2,2-Tetrachloroethane	0.373	0.369	0.500	1.1
S 38 Toluene-d8	1.139	1.311	0.010	15.1
39 Toluene	0.872	0.762	0.400	12.7
40 Chlorobenzene	0.864	0.829	0.500	4.0
41 Ethylbenzene	0.474	0.440	0.100	7.3
S 42 Bromofluorobenzene	0.520	0.572	0.200	10.1
43 Styrene	0.934	0.930	0.300	0.4

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i Injection Date: 14-JUN-1994 10:26
Lab File ID: k165cc1.d Init. Calibration Date(s): 05/19/94 05/19/94
Analysis Type: SOIL Init. Calibration Times: 16:32 23:28
Lab Sample ID: Method File: /chem/k.i/k061494.b/kclps.m
Quant Type: ISTD

COMPOUND	RRF		MIN		MAX	
	RRF	RFSD	RRF	%D	%D	
44 m&p-Xylene	0.604	0.543	0.300	10.1	25.0	
45 o-Xylene	0.569	0.529	0.300	7.0	25.0	
M 46 Xylenes (total)	****	----	0.300	****	25.0	

SPL Labs

Data file : /chem/k.i/k061494.b/k165cc1.d

Lab. Id. :

Inj Date : 14-JUN-1994 10:26

Operator :

Smp Info : 50 STD

Misc Info :

Comment :

Method : /chem/k.i/k061494.b/kclps.m

Meth Date : 14-Jun-1994 17:20 hillery

Cal Date : 14-JUN-1994 10:26

Als bottle: 3

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: SOIL

Quant Type: ISTD

Autotune Date: {

Inst ID: k.i

Cal File: k165cc1.d

Continuing Calibration Sample

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG MASS	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ng)	FINAL (ug/Kg)
1 Bromochloromethane	128.00	2.520	(1.000)	65375	50	
2 Chloromethane	50.00	1.657	(0.657)	178522	37	37
3 Bromomethane	94.00	1.733	(0.687)	118561	41	41
4 Vinyl Chloride	62.00	1.587	(0.669)	172074	40	40
5 Chloroethane	64.00	1.717	(0.681)	148428	61	61
6 Trichlorofluoromethane	101.00	1.839	(0.729)	134959	33	33
7 Methylene Chloride	84.00	1.975	(0.784)	121415	44	44
8 Acetone	43.00	1.808	(0.717)	30197	9	9
9 Carbon Disulfide	76.00	2.051	(0.814)	422005	48	48
10 1,1-Dichloroethene	96.00	1.929	(0.766)	103516	43	43
11 1,1-Dichloroethane	63.00	2.202	(0.874)	218843	42	42
12 trans-1,2-Dichloroethene	96.00	2.126	(0.844)	101444	46	46
13 cis-1,2-Dichloroethene	96.00	2.430	(0.964)	113368	48	48
15 Chloroform	83.00	2.520	(1.000)	201535	41	41
16 1,2-Dichloroethane-d4	65.00	2.823	(1.120)	183865	49	49
17 1,2-Dichloroethane	62.00	2.869	(1.138)	190257	40	40
18 1,4-Difluorobenzene	114.00	3.324	(1.000)	393488	50	
19 2-Butanone	43.00	2.339	(0.704)	91199	25	25
20 1,1,1-Trichloroethane	97.00	2.339	(0.854)	158288	41	41
21 Carbon Tetrachloride	117.00	3.051	(0.918)	131848	39	39
22 Vinyl Acetate	43.00	2.217	(0.667)	439086	43	43
23 Bromodichloromethane	83.00	3.308	(1.146)	153705	45	45
24 1,2-Dichloropropane	63.00	3.657	(1.100)	133038	48	48
25 cis-1,3-Dichloropropene	75.00	5.324	(1.602)	170531	44	44
26 Trichloroethene	130.00	3.572	(1.105)	101091	48	48
27 Benzene	78.00	3.036	(0.913)	429770	47	47
28 Dibromochloromethane	129.00	6.081	(1.830)	103267	48	48
29 trans-1,3-Dichloropropene	75.00	4.642	(1.397)	182598	46	46
30 1,1,2-Trichloroethane	97.00	5.475	(1.647)	83825	50	50

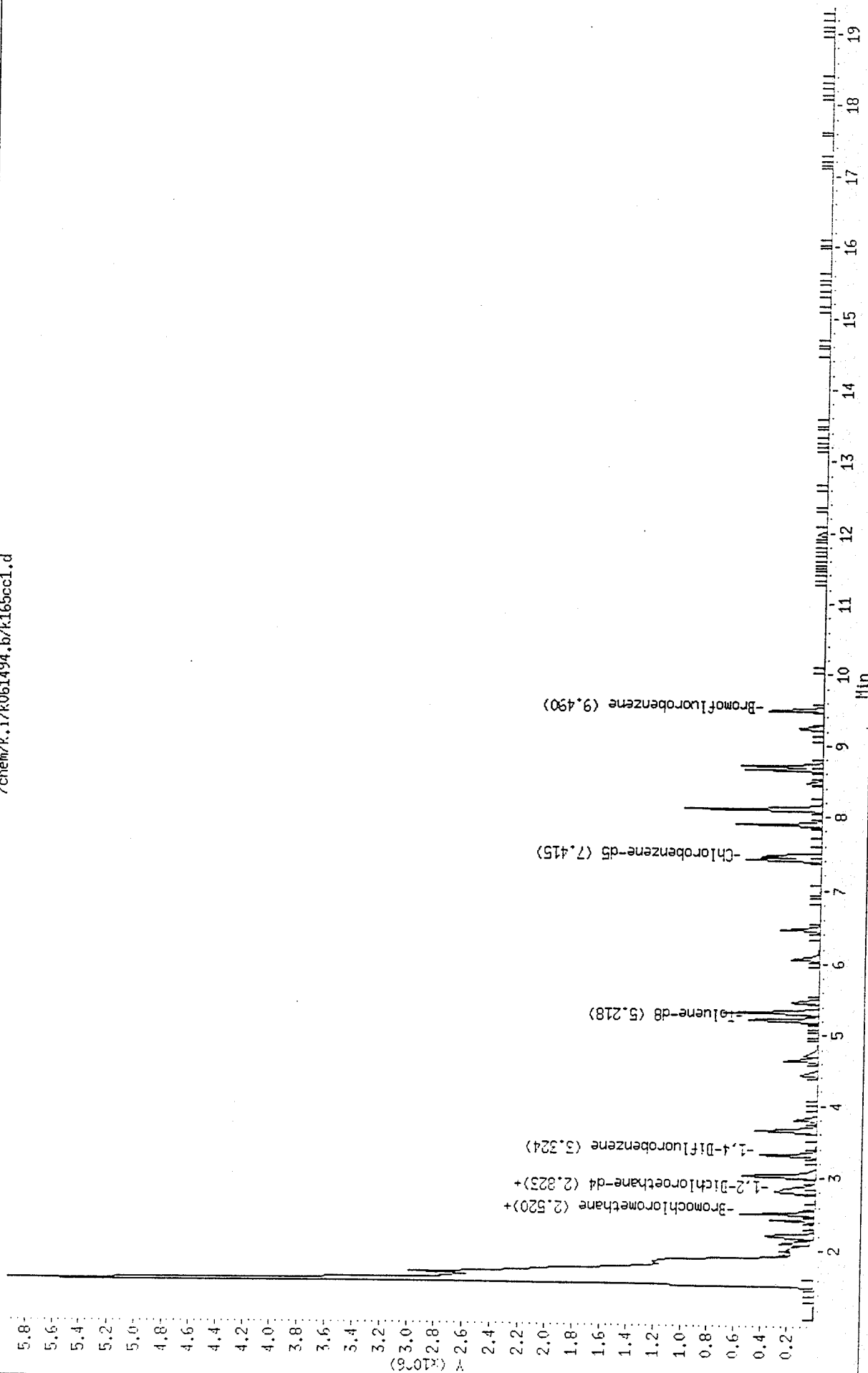
Compounds	QUANT SIG					CONCENTRATIONS	
	MASS	RT	REL RT	RESPONSE		IN-COLUMN	FINAL
-----	----	==	=====	-----		ng.	ug/Kg
31 2-Chloroethylvinylether	63.00	2.202	(0.663)	218843		43	43
32 Bromoform	173.00	3.475	(0.550)	63960		49	49
* 33 Chlorobenzene-d5	117.00	7.415	(1.000)	337452		50	
34 4-Methyl-2-Pentanone	43.00	4.717	(0.635)	184551		36	36
35 2-Hexanone	43.00	6.051	(0.615)	140740		27	27
36 Tetrachloroethene	164.00	6.475	(0.873)	30568		48	48
37 1,1,2,2-Tetrachloroethane	33.00	9.248	(1.247)	124638		49	49
\$ 38 Toluene-d8	98.00	5.218	(0.704)	442263		58	58
39 Toluene	92.00	5.324	(0.718)	257006		44	44
40 Chlorobenzene	112.00	7.475	(1.008)	279844		48	48
41 Ethylbenzene	106.00	7.899	(1.065)	148313		46	46
\$ 42 Bromofluorobenzene	95.00	9.490	(1.280)	193120		55	55
43 Styrene	104.00	8.657	(1.168)	313894		50	50
44 m&p-Xylene	106.00	8.112	(1.094)	366349		90	90
45 o-Xylene	106.00	8.718	(1.176)	178565		46	46

Data File: /chem/k.i/k061494.b/k165cc1.d
Date : 14-JUL-94 10:26
Instrument : k.i
Sample ID :
Column phase :
Volume Injected (uL) : 0.0

Page 3

Column diameter : 0.25

/chem/k.i/k061494.b/k165cc1.d



SPL Labs

Data file : /chem/k.i/k061494.b/k165b02.d
Lab. Id. : Quant Type: ISTD
Inj Date : 14-JUN-1994 12:11 Autotune Date:
Operator : Inst ID: k.i
Smp Info : METHOD BLANK
Misc Info :
Comment :
Method : /chem/k.i/k061494.b/kclps.m
Meth Date : 14-Jun-1994 17:20 hillery
Cal Date : 14-JUN-1994 10:26 Cal File: k165cc1.d
Als bottle: 6
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL
					(ng)	(ug/Kg)
=====	=====	==	=====	=====	=====	=====
* 1 Bromochloromethane	128.00	2.520	(1.000)	74285	50	(Q)
\$ 16 1,2-Dichloroethane-d4	65.00	2.923	(1.120)	207078	50	50
* 18 1,4-Difluorobenzene	114.00	3.324	(1.000)	421757	50	
* 33 Chlorobenzene-d5	117.00	7.415	(1.000)	356804	50	
\$ 38 Toluene-d8	98.00	5.218	(0.704)	465567	50	50
\$ 42 Bromofluorobenzene	95.00	9.506	(1.282)	207189	51	51

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Labs

RECOVERY REPORT

Client Name: Client SDG: k061494.b
Sample Matrix: SOLID Fraction: VOA
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 16 1,2-Dichloroethane	50	50	99.12	70-121
\$ 38 Toluene-d8	50	50	99.56	84-138
\$ 42 Bromofluorobenzene	50	51	101.47	59-113

* - Values outside of QC limits
Spike Recovery: 0 out of 3 outside limits
0 out of 3 not found

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k165b02.d
Lab Sample ID:
Analysis Type: VOA
Quant Type: ISTD
Method File: /chem/k.i/k061494.b/kclps.m
Misc Info:

Calibration Date: 06/14/94
Calibration Time: 1026
Sample Type: SOIL
Level: LOW

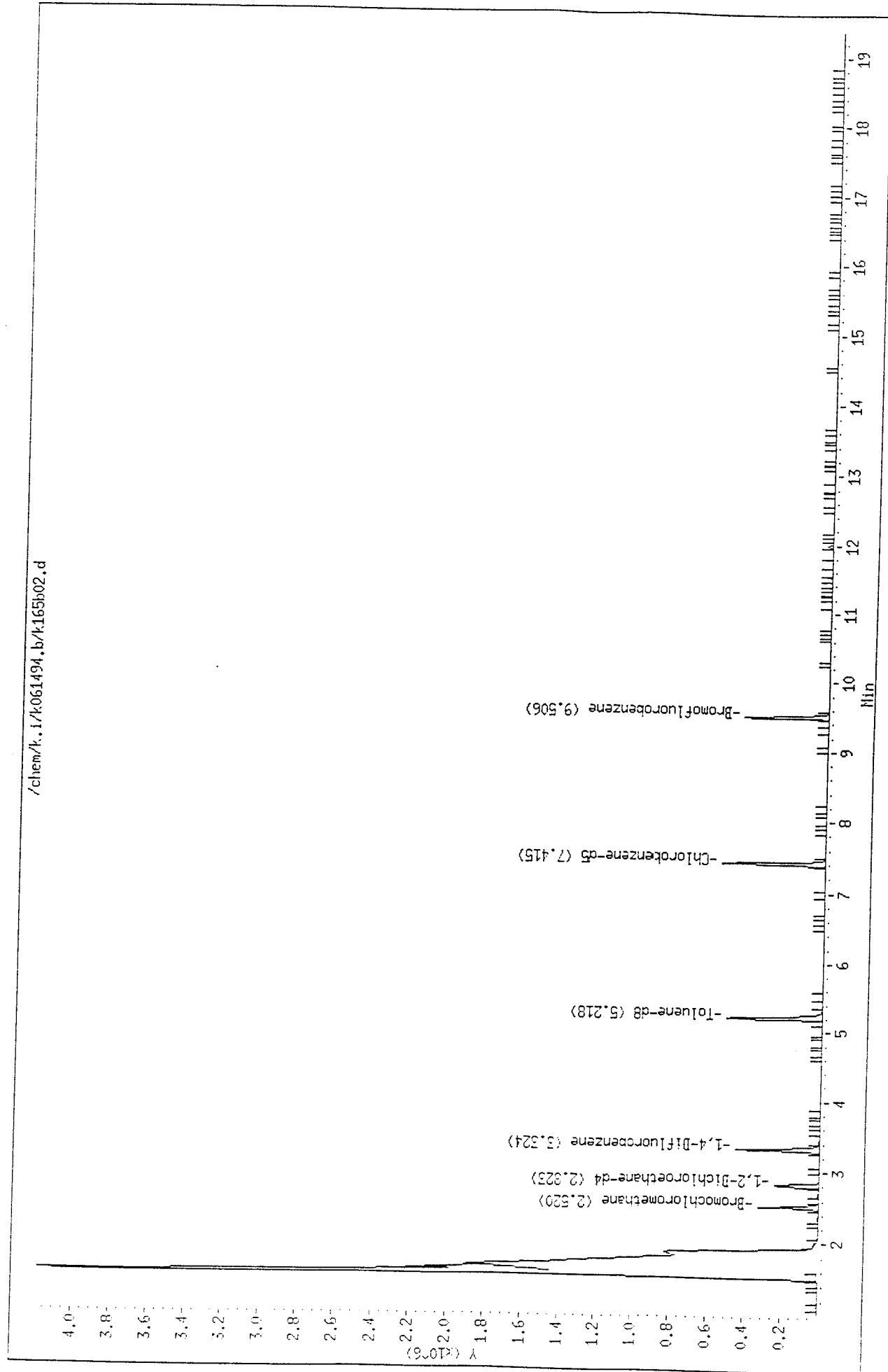
COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	65375	32687	130750	74285	13.63
18 1,4-Difluorobenzene	393483	196744	786976	421757	7.18
33 Chlorobenzene-d5	337452	168726	674904	356804	5.73

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
1 Bromochloromethane	2.52	2.02	3.02	2.52	0.00
18 1,4-Difluorobenzene	3.32	2.82	3.82	3.32	0.00
33 Chlorobenzene-d5	7.41	6.91	7.91	7.41	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k061494.b/k165b02.d
Date : 14-JUN-1994 12:11
Instrument : k.i
Sample ID :
Column phase :
Volume Injected (ul) : 0.0

Column diameter : 0.25





Certificate of Analysis No. 9406119-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:20:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	PQL*	UNITS	
Acenaphthene	ND	330	µg/Kg	
Acenaphthylene	ND	330	µg/Kg	
Aniline	ND	330	µg/Kg	
Anthracene	ND	330	µg/Kg	
Benzo(a)Anthracene	ND	330	µg/Kg	
Benzo(b)Fluoranthene	ND	330	µg/Kg	
Benzo(k)Fluoranthene	ND	330	µg/Kg	
Benzo(a)Pyrene	ND	330	µg/Kg	
Benzoic Acid	ND	1600	µg/Kg	
Benzo(g,h,i)Perylene	ND	330	µg/Kg	
Benzyl alcohol	ND	330	µg/Kg	
4-Bromophenylphenyl ether	ND	330	µg/Kg	
Butylbenzylphthalate	ND	330	µg/Kg	
di-n-Butyl phthalate	ND	330	µg/Kg	
Carbazole	ND	330	µg/Kg	
4-Chloroaniline	ND	330	µg/Kg	
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg	
bis(2-Chloroethyl) Ether	ND	330	µg/Kg	
bis(2-Chloroisopropyl) Ether	ND	330	µg/Kg	
4-Chloro-3-Methylphenol	ND	330	µg/Kg	
2-Chloronaphthalene	ND	330	µg/Kg	
2-Chlorophenol	ND	330	µg/Kg	
4-Chlorophenylphenyl ether	ND	330	µg/Kg	
Chrysene	ND	330	µg/Kg	
Dibenz(a,h)Anthracene	ND	330	µg/Kg	
Dibenzofuran	ND	330	µg/Kg	
1,2-Dichlorobenzene	ND	330	µg/Kg	
1,3-Dichlorobenzene	ND	330	µg/Kg	
1,4-Dichlorobenzene	ND	330	µg/Kg	
3,3'-Dichlorobenzidine	ND	330	µg/Kg	
2,4-Dichlorophenol	ND	330	µg/Kg	
Diethylphthalate	ND	330	µg/Kg	
2,4-Dimethylphenol	ND	330	µg/Kg	
Dimethyl Phthalate	ND	330	µg/Kg	
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg	
2,4-Dinitrophenol	ND	800	µg/Kg	
2,4-Dinitrotoluene	ND	330	µg/Kg	
2,6-Dinitrotoluene	ND	330	µg/Kg	

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-11

Operational Tech

SAMPLE ID: A-01 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 17:10:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s08.d
Lab. Id. : Quant Type: ISTD
Inj Date : 17-JUN-1994 17:10 Autotune Date: {
Operator : LH Inst ID: j.i
Smp Info : 9406119-11B
Misc Info : 9406119-11B
Comment :
Method : /chem/j.i/j940617.b/jclps.m
Meth Date : 22-Jun-1994 13:38 liping
Cal Date : 17-JUN-1994 09:39 Cal File: j168ccol.d
Als bottle: 15
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		ON-COLUMN	FINAL			
	MASS	RT	REL RT	RESPONSE	(ng)	(ug/Kg)
=====	=====	==	=====	=====	=====	=====
\$ 3 2-Fluorophenol	112.00	3.689	(0.770)	614941	140	2300
\$ 5 Phenol-d5	99.00	4.486	(0.936)	734765	130	2100
\$ 8 2-Chlorophenol-d4	132.00	4.617	(0.963)	646641	130	2100
* 11 1,4-Dichlorobenzene-d4	152.00	4.781	(1.000)	120315	40	
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.978	(0.614)	290945	97	1600
\$ 23 Nitrobenzene-d5	82.00	5.361	(0.875)	493066	100	1800
* 32 Naphthalene-d8	136.00	6.115	(1.000)	382259	40	
\$ 40 2-Fluorobiphenyl	172.00	7.330	(0.904)	803734	110	1800
* 48 Acenaphthene-d10	164.00	8.098	(1.000)	224485	40	
\$ 61 2,4,6-Tribromophenol	329.70	9.021	(0.920)	141485	150	2400
* 65 Phenanthrene-d10	188.00	9.770	(1.000)	296683	40	
\$ 72 Terphenyl-d14	244.00	11.636	(0.879)	469898	90	1500
* 76 Chrysene-d12	240.00	13.232	(1.000)	153243	40	
* 83 Perylene-d12	264.00	16.205	(1.000)	187014	40	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s08.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-11B

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	121206	60603	242412	120315	-0.74
32 Naphthalene-d8	445390	222695	890780	382259	-14.17
48 Acenaphthene-d10	275750	137875	551500	224485	-18.59
65 Phenanthrene-d10	336972	168486	673944	296683	-11.96
76 Chrysene-d12	146532	73266	293064	153243	4.58
83 Perylene-d12	160474	80237	320948	187014	16.54

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.78	-0.41
32 Naphthalene-d8	6.13	5.63	6.63	6.11	-0.32
48 Acenaphthene-d10	8.12	7.62	8.62	8.10	-0.33
65 Phenanthrene-d10	9.79	9.29	10.29	9.77	-0.20
76 Chrysene-d12	13.26	12.76	13.76	13.23	-0.18
83 Perylene-d12	16.21	15.71	16.71	16.20	-0.02

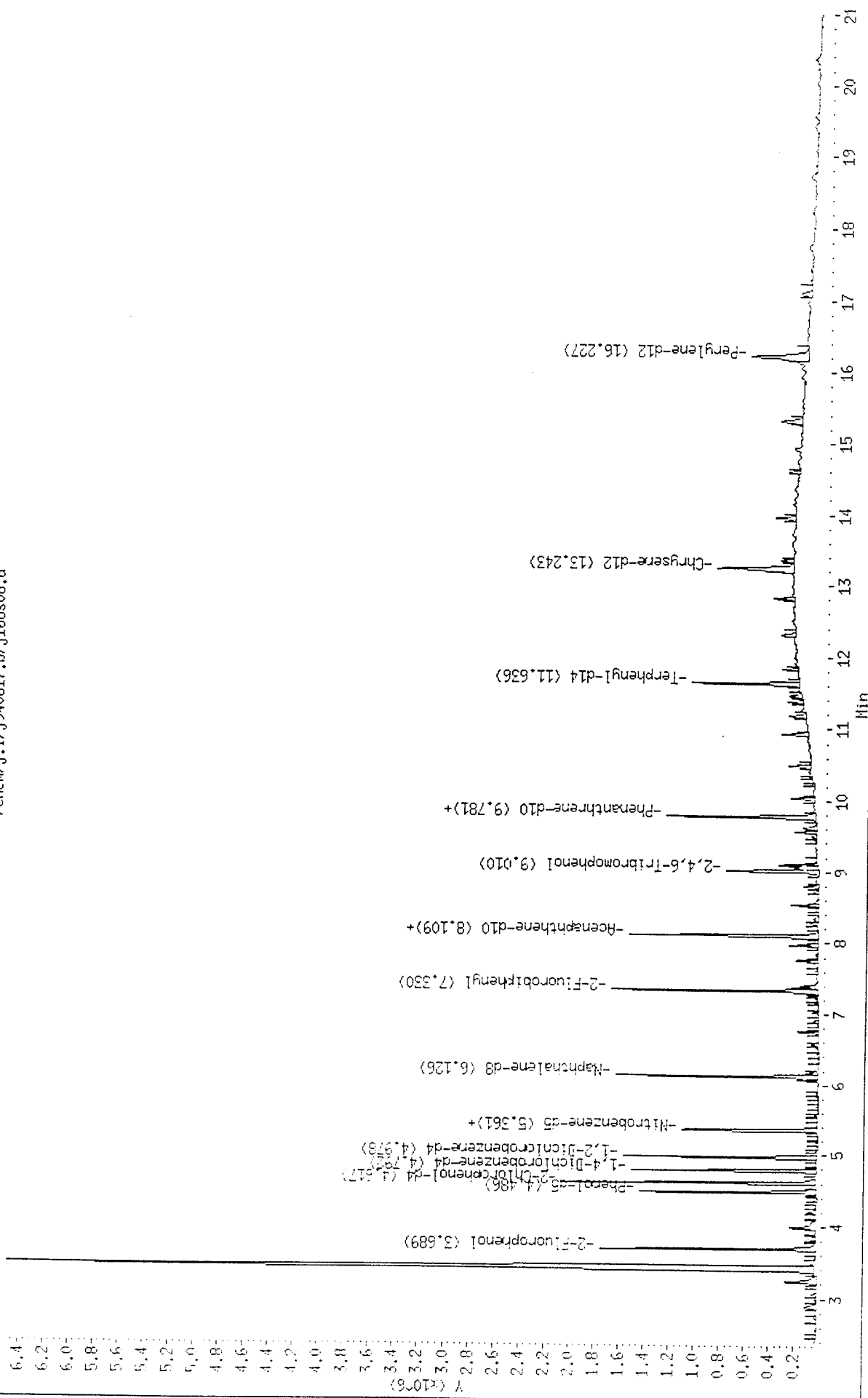
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168s08.d
 Date : 17-MAR-1994 17:10
 Instrument : j.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (uL) : 2.0

Page 1

Column diameter : 0.25

/chem/j.i./j940617.b/j168s08.d





Certificate of Analysis No. 9406119-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:28:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
Benzo(g,h,i)Perylene	ND	330	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl) Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl) Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-12

Operational Tech

SAMPLE ID: A-01 BH Int.2

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 16:43:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s07.d
Lab. Id. : Quant Type: ISTD
Inj Date : 17-JUN-94 16:43 Autotune Date: {
Operator : LH Inst ID: j.i
Smp Info : 9406119-12B
Misc Info : 9406119-12B
Comment :
Method : /chem/j.i/j940617.b/jclps.m
Meth Date : 17-Jun-1994 14:44 liping
Cal Date : 17-JUN-1994 09:39 Cal File: j163cc1.d
Als bottle: 14
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG MASS	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ng)	FINAL (ug/Kg)
=====	=====	==	=====	=====	=====	=====
\$ 3 2-Fluorophenol	112.00	3.686	(0.770)	517396	100	1700
\$ 5 Phenol-d5	99.00	4.483	(0.936)	610937	95	1600
\$ 8 2-Chlorophenol-d4	132.00	4.614	(0.963)	568876	97	1600
* 11 1,4-Dichlorobenzene-d4	152.00	4.789	(1.000)	138384	40	
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.985	(0.615)	249648	63	1000
21 N-Nitroso-di-n-propylamine	70.00	5.367	(1.121)	64731	17	290(aQ)
\$ 23 Nitrobenzene-d5	82.00	5.367	(0.877)	414755	66	1100
* 32 Naphthalene-d8	136.00	6.119	(1.000)	508080	40	
40 2-Fluorobiphenyl	172.00	7.328	(0.904)	701786	73	1200
43 Acenaphthene-d10	164.00	8.102	(1.000)	297323	40	
- 61 2,4,6-Tribromophenol	330.00	9.018	(0.923)	108343	83	1400(Q)
* 65 Phenanthrene-d10	188.00	9.772	(1.000)	401643	40	
\$ 72 Terphenyl-d14	244.00	11.634	(0.879)	592825	71	1200
* 76 Chrysene-d12	240.00	13.236	(1.000)	244505	40	
* 83 Perylene-d12	264.00	16.199	(1.000)	245189	40	

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s07.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclips.m
 Misc Info: 9406119-123

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	121206	60603	242412	138384	14.17
32 Naphthalene-d8	445390	222695	890780	508080	14.08
48 Acenaphthene-d10	275750	137875	551500	297323	7.82
65 Phenanthrene-d10	336972	168486	673944	401643	19.19
76 Chrysene-d12	146532	73266	293064	244505	66.86
83 Perylene-d12	160474	80237	320948	245189	52.79

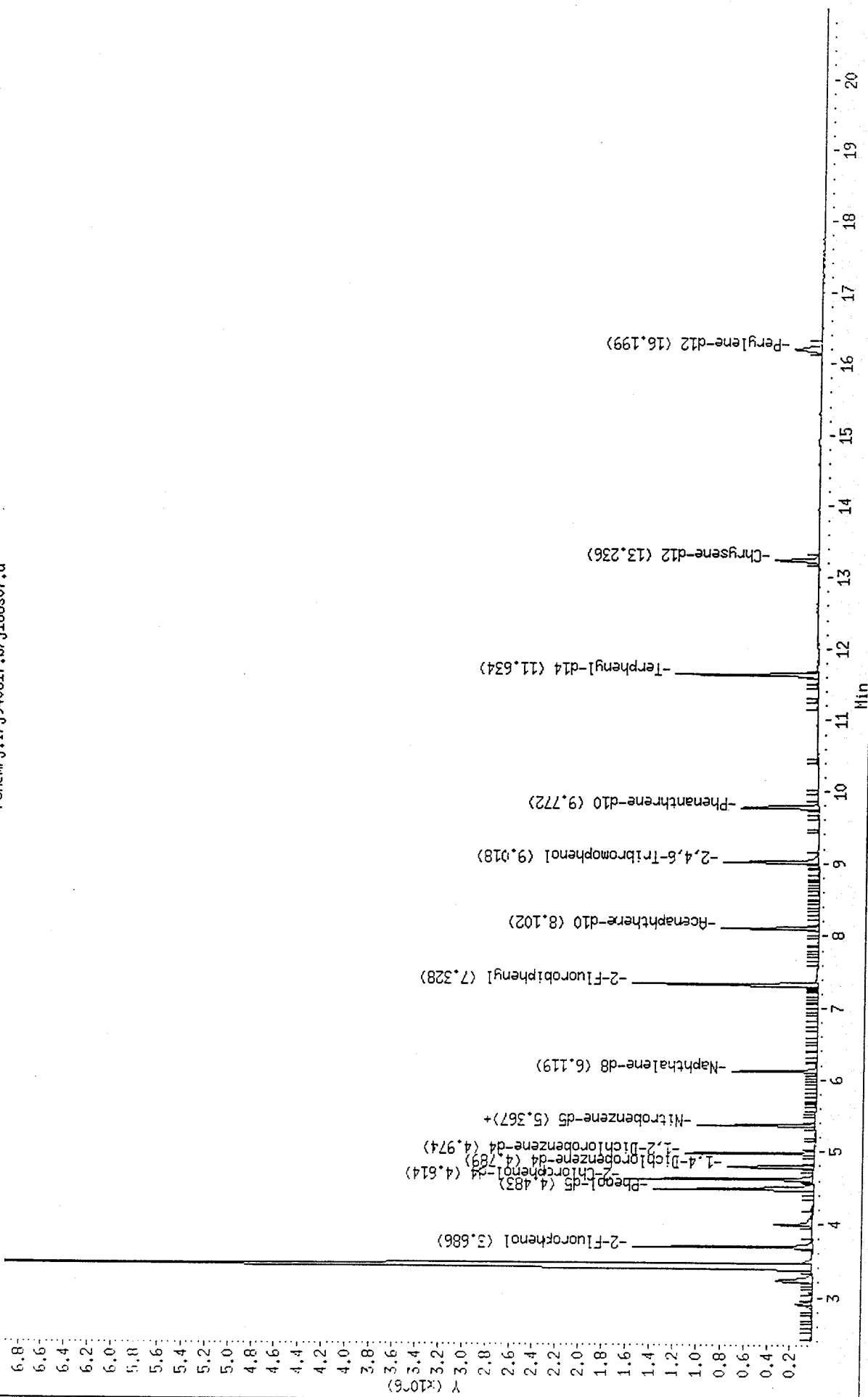
COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.25
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.25
48 Acenaphthene-d10	8.12	7.62	8.62	8.10	-0.27
65 Phenanthrene-d10	9.79	9.29	10.29	9.77	-0.17
76 Chrysene-d12	13.26	12.76	13.76	13.24	-0.15
83 Perylene-d12	16.21	15.71	16.71	16.20	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168s07.d
 Date : 17-JUN-1994 16:43
 Instrument : j.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (uL) : 2.0

Column diameter : 0.25

/chem/j.i./j940617.b/j168s07.d



[illegible]

TO: SAC, NEW YORK (100-101010) (P)
 FROM: SAC, NEW YORK (100-101010) (P)

RE: [REDACTED]

Weight: 0.000

Net: 0.000

DATE: 10/10/70

1. 1,1-DICHLOROETHYLENE
 2. 1,1-DIBROMOETHYLENE
 3. 1,1-DIBROMOETHYLENE
 4. 1,1-DIBROMOETHYLENE
 5. 1,1-DIBROMOETHYLENE
 6. 1,1-DIBROMOETHYLENE
 7. 1,1-DIBROMOETHYLENE
 8. 1,1-DIBROMOETHYLENE
 9. 1,1-DIBROMOETHYLENE
 10. 1,1-DIBROMOETHYLENE
 11. 1,1-DIBROMOETHYLENE
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 13. 1,1-DIBROMOETHYLENE
 14. 1,1-DIBROMOETHYLENE
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 97. 1,1-DIBROMOETHYLENE
 98. 1,1-DIBROMOETHYLENE
 99. 1,1-DIBROMOETHYLENE
 100. 1,1-DIBROMOETHYLENE

Run	Time	Area	Height	Amount	%Tot
101	1.00	1.00	1.00	0.011 NG/UL	0.00
102	1.00	1.00	1.00	0.061 NG/UL	0.02
103	1.00	1.00	1.00	0.068 NG/UL	0.02

						Area (mg)	Amount	UTot
						176.	0.077 NG/UL	0.02
						211.	0.073 NG/UL	0.02
						22.	0.022 NG/UL	0.01
						5929.	1.339 NG/UL	0.42
						620.	0.117 NG/UL	0.04
						250.	0.066 NG/UL	0.02
						1276.	0.177 NG/UL	0.06
						12265.	1.854 NG/UL	0.59
						11072.	2.394 NG/UL	0.75
						562.	0.245 NG/UL	0.08
						7731.	1.287 NG/UL	0.40
						5586.	1.339 NG/UL	0.42
						2001.	0.495 NG/UL	0.16
						14297.	1.796 NG/UL	0.56
						7475.	1.026 NG/UL	0.32
						6508.	0.893 NG/UL	0.28
						1013.	0.146 NG/UL	0.05
						7094.	0.915 NG/UL	0.29

						Amnt	Amnt(L)	P. Fac	R. Fac(L)	Ratio
						0.01	25.00	0.001	2.024	0.00
						0.02	25.00	0.003	1.192	0.00
						0.07	25.00	0.004	1.504	0.00
						0.08	25.00	0.003	0.966	0.00
						0.07	25.00	0.004	1.215	0.00
						0.03	25.00	0.001	0.542	0.00
						1.34	25.00	0.077	1.434	0.05
						1.12	25.00	0.007	1.570	0.00
						0.07	25.00	0.003	1.056	0.00
						1.18	25.00	0.014	1.995	0.01
						1.35	25.00	0.137	1.848	0.07

Year	Month	Day	WAT(L)	Ratio	Temp	Ampt(L)	R Fac	R Fac(L)	Ratio
1971	01	01	994						
1971	01	02	985	1.00	1.13	25.10	3.113	1.131	0.10
1971	01	03	986	1.00	1.24	25.00	3.006	0.536	0.01
1971	01	04	900						
1971	01	05	988	1.00	1.23	25.00	3.073	1.533	0.05
1971	01	06	982	1.00	1.14	25.00	3.057	1.054	0.05
1971	01	07	910	1.00	0.60	25.00	3.020	1.031	0.02
1971	01	08	932						
1971	01	09	973	1.00	1.50	25.00	3.093	1.290	0.07
1971	01	10	974						
1971	01	11	983	1.00	1.03	25.00	3.048	1.130	0.04
1971	01	12	100	1.00	1.33	25.00	3.042	1.131	0.04
1971	01	13	104	1.00	1.15	25.00	0.007	1.122	0.01
1971	01	14	100	1.00	1.31	25.00	3.046	1.257	0.04

PTC

05/20/91 05:13:00

SAMPLE: 0270-405119, 0-01, L.S. 2406119-118, 0.0, 0.39-1.06/13 DE-20L

COMDS.: CRP, 05203201, 05200F01, 000, 40-4--300010, HEST D1

RELISE: 0 1-2310 L66EL; H 0, 4.0 004H; A 0, 1.0 J 0 BASE: 0 20. 3

100.0

1841

1636

1462

130000

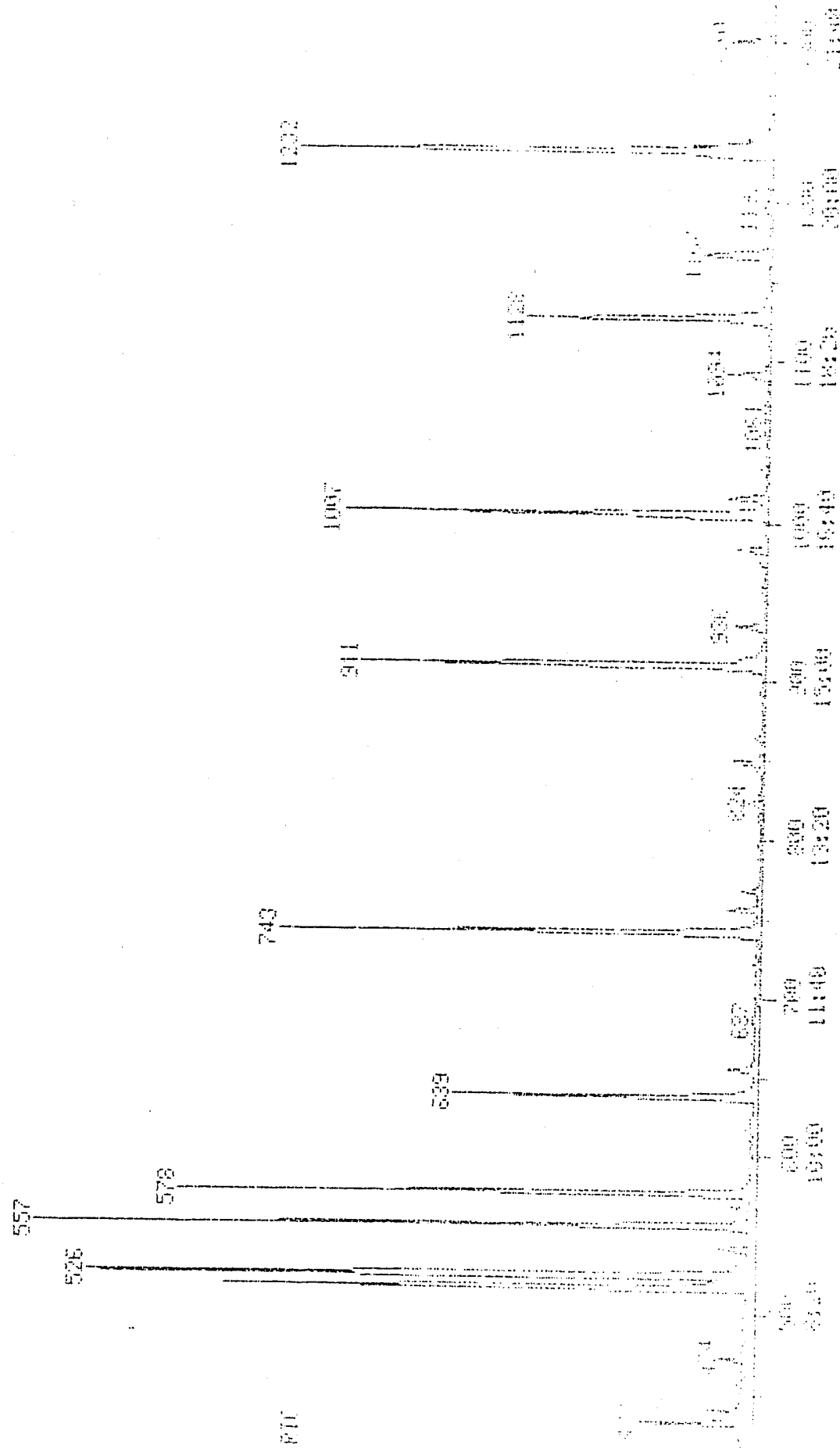
SCALE 1000 TO 2000

OUT OF 400 TO 2000

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000 27000 28000 29000 30000 31000 32000 33000 34000 35000 36000 37000 38000 39000 40000 41000 42000 43000 44000 45000 46000 47000 48000 49000 50000 51000 52000 53000 54000 55000 56000 57000 58000 59000 60000 61000 62000 63000 64000 65000 66000 67000 68000 69000 70000 71000 72000 73000 74000 75000 76000 77000 78000 79000 80000 81000 82000 83000 84000 85000 86000 87000 88000 89000 90000 91000 92000 93000 94000 95000 96000 97000 98000 99000 100000

RIC
 86/28/94 23:19:00
 DATA: B611911 #1
 CALI: B611911 #3
 SAMPLE: 8270.406113, A-01, L/S, 9406119-11B, B.E.30-1.06/13 DE-2UL
 COND.S.: CAP, 06205201, 06200F01, 40/4--300010, INST D1
 RANGE: 5 1.2310 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

400.0





Certificate of Analysis No. 9406119-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:55:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
Benzo(g,h,i)Perylene	ND	330	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl) Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl) Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-13

Operational Tech

SAMPLE ID: A-02 BH Int.1

ANALYTICAL DATA (continued)			
PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 16:15:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s06.d

Lab. Id. :

Quant Type: ISTD

Inj Date : 17-JUN-94 16:15

Autotune Date: {

Operator : LH

Inst ID: j.i

Smp Info : 9406119-13B

Misc Info : 9406119-13B

Comment :

Method : /chem/j.i/j940617.b/jclps.m

Meth Date : 17-Jun-1994 14:44 liping

Cal Date : 17-JUN-1994 09:39

Cal File: j168cc1.d

Als bottle: 13

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	ON-COLUMN	FINAL
					(ng)	(ug/Kg)
=====	----		--	-----	-----	-----
\$ 3 2-Fluorophenol		112.00	3.698	(0.772)	549394	110 1900
\$ 5 Phenol-d5		99.00	4.485	(0.936)	627265	100 1700
\$ 8 2-Chlorophenol-d4		132.00	4.616	(0.963)	577768	100 1700
* 11 1,4-Dichlorobenzene-d4		152.00	4.792	(1.000)	130676	40
\$ 13 1,2-Dichlorobenzene-d4		152.00	4.989	(0.615)	240596	62 1000
15 Benzyl alcohol		108.00	4.989	(1.041)	3857	4 61(aQ)
19 meta,para-Cresol		108.00	5.538	(1.156)	16719	3 55(aQ)
20 4-Methylphenol		108.00	5.538	(1.156)	16719	3 55(aQ)
21 N-Nitroso-di-n-propylamine		70.00	5.329	(1.112)	195142	55-1) 910(Q)
\$ 23 Nitrobenzene-d5		92.00	5.373	(0.876)	464612	83 1400
24 Nitrobenzene		77.00	5.461	(0.891)	64051	12 200(aQ)
25 Isophorone		82.00	5.647	(0.921)	30966	3 50(a)
26 2-Nitrophenol		139.00	5.735	(0.935)	13497	4 74(aQ)
27 2,4-Dimethylphenol		107.00	5.757	(0.939)	25902	5 84(a)
28 bis(2-Chloroethoxy)methane		93.00	5.900	(0.962)	17354	3 54(aQ)
29 Benzoic acid		122.00	5.757	(0.939)	15754	4 67(aQ)
* 32 Naphthalene-d8		136.00	6.131	(1.000)	453795	40
33 Naphthalene		128.00	6.153	(1.004)	42996	3 54(a)
34 4-Chloroaniline		127.00	5.945	(0.953)	36693	6 100(aQ)
\$ 40 2-Fluorobiphenyl		172.00	7.328	(0.904)	719038	77 1300
46 2,6-Dinitrotoluene		165.00	8.108	(1.000)	38288	14 240(aQ)
* 48 Acenaphthene-d10		164.00	8.108	(1.000)	290298	40
52 2,4-Dinitrotoluene		165.00	8.108	(1.000)	38288	12 190(aQ)
\$ 61 2,4,6-Tribromophenol		330.00	9.021	(0.922)	93760	77 1300(Q)
* 65 Phenanthrene-d10		188.00	9.781	(1.000)	375877	40
\$ 72 Terphenyl-d14		244.00	11.637	(0.879)	469942	67 1100
* 76 Chrysene-d12		240.00	13.245	(1.000)	204015	40
* 83 Perylene-d12		254.00	16.205	(1.000)	250008	40

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s06.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-13B

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SCIL
 Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	121206	60603	242412	130676	7.81
32 Naphthalene-d8	445390	222695	890780	453795	1.89
48 Acenaphthene-d10	275750	137875	551500	290298	5.28
65 Phenanthrene-d10	336972	168486	673944	375877	11.55
76 Chrysene-d12	146532	73266	293064	204015	39.23
83 Perylene-d12	160474	80237	320948	253008	55.79

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.20
32 Naphthalene-d8	6.13	5.63	6.63	6.13	-0.05
48 Acenaphthene-d10	8.12	7.62	8.62	8.11	-0.20
65 Phenanthrene-d10	9.79	9.29	10.29	9.78	-0.08
76 Chrysene-d12	13.26	12.76	13.76	13.24	-0.08
83 Perylene-d12	16.21	15.71	16.71	16.21	-0.02

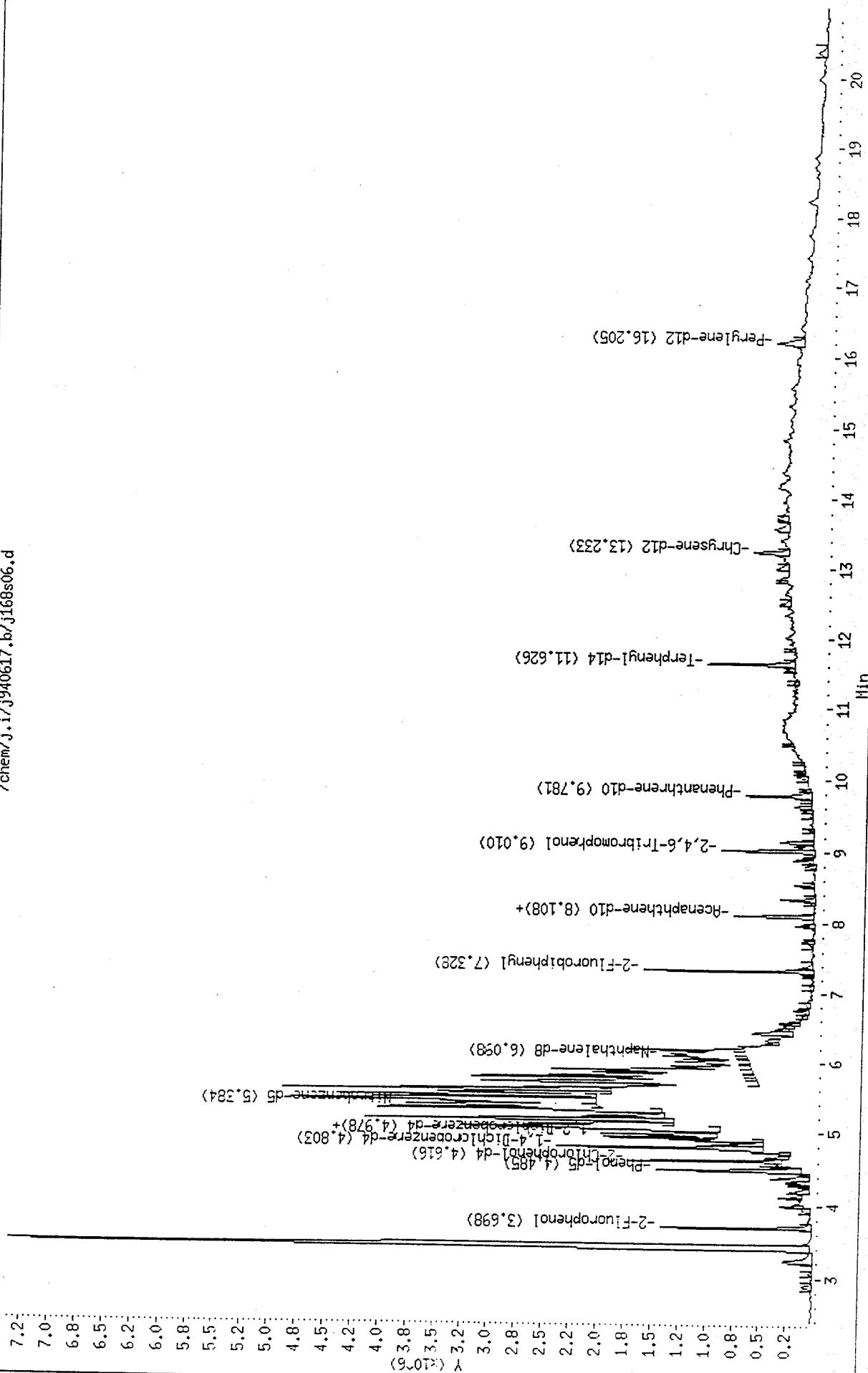
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168s06.d
 Date : 17-JUN-1994 16:15
 Instrument : j.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (uL) : 2.0

Page 1

Column diameter : 0.25

/chem/j.i./j940617.b/j168s06.d





Certificate of Analysis No. 9406119-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 17:08:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
Benzo(g,h,i)Perylene	ND	330	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl)Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl)Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-14

Operational Tech

SAMPLE ID: A-02 BH Int.2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 15:48:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s05.d
Lab. Id. : Quant Type: ISTD
Inj Date : 17-JUN-94 15:48 Autotune Date: {
Operator : LH Inst ID: j.i
Smp Info : 9406119-14B
Misc Info : 9406119-14B
Comment :
Method : /chem/j.i/j940617.b/jclps.m
Meth Date : 17-Jun-1994 14:44 liping
Cal Date : 17-JUN-1994 09:39 Cal File: j168cc1.d
Als bottle: 12
Dil Factor: 1.000 Target Version: Target 3.00
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/Kg)
-----	----	----	----	-----	-----	-----
\$ 3 2-Flucrophenol	112.00	3.698 (0.772)	518566	110	1800	
\$ 5 Phenol-d5	99.00	4.483 (0.936)	630928	100	1700	
\$ 8 2-Chlorophenol-d4	132.00	4.614 (0.963)	566516	100	1700	
* 11 1,4-Dichlorobenzene-d4	152.00	4.789 (1.000)	129775	40		
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.975 (0.614)	251198	68	1100	
21 N-Nitroso-di-n-propylamine	70.00	5.367 (1.121)	64030	18	300(aQ)	
\$ 23 Nitrobenzene-d5	82.00	5.367 (0.877)	415441	71	1200	
* 32 Naphthalene-d8	136.00	6.119 (1.000)	473372	40		
\$ 40 2-Flucrobiphenyl	172.00	7.328 (0.904)	703615	80	1300	
* 48 Acenaphthene-d10	164.00	9.101 (1.000)	275429	40		
\$ 61 2,4,6-Tribromophenol	330.00	9.016 (0.922)	81952	61	1000(Q)	
* 65 Phenanthrene-d10	188.00	9.779 (1.000)	412579	40		
69 Di-n-butylphthalate	149.00	10.422 (1.066)	71459	4	71(a)	
\$ 72 Terphenyl-d14	244.00	11.632 (0.879)	673220	74	1200	
* 76 Chrysene-d12	240.00	13.237 (1.000)	266257	40		
* 83 Perylene-d12	264.00	14.198 (1.000)	247378	40		

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(LOQ).
Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s05.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-14B

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	121206	60603	242412	129775	7.07
32 Naphthalene-d8	445390	222695	890780	473372	6.28
48 Acenaphthene-d10	275750	137875	551500	275429	-0.12
65 Phenanthrene-d10	336972	168486	673944	412579	22.44
76 Chrysene-d12	146532	73266	293064	266257	81.71
83 Perylene-d12	160474	80237	320948	247378	54.15

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.25
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.25
48 Acenaphthene-d10	8.12	7.62	8.62	8.10	-0.28
65 Phenanthrene-d10	9.79	9.29	10.29	9.78	-0.10
76 Chrysene-d12	13.26	12.76	13.76	13.24	-0.14
83 Perylene-d12	16.21	15.71	16.71	16.20	-0.06

AREA UPPER LIMIT = +100% of internal standard area.

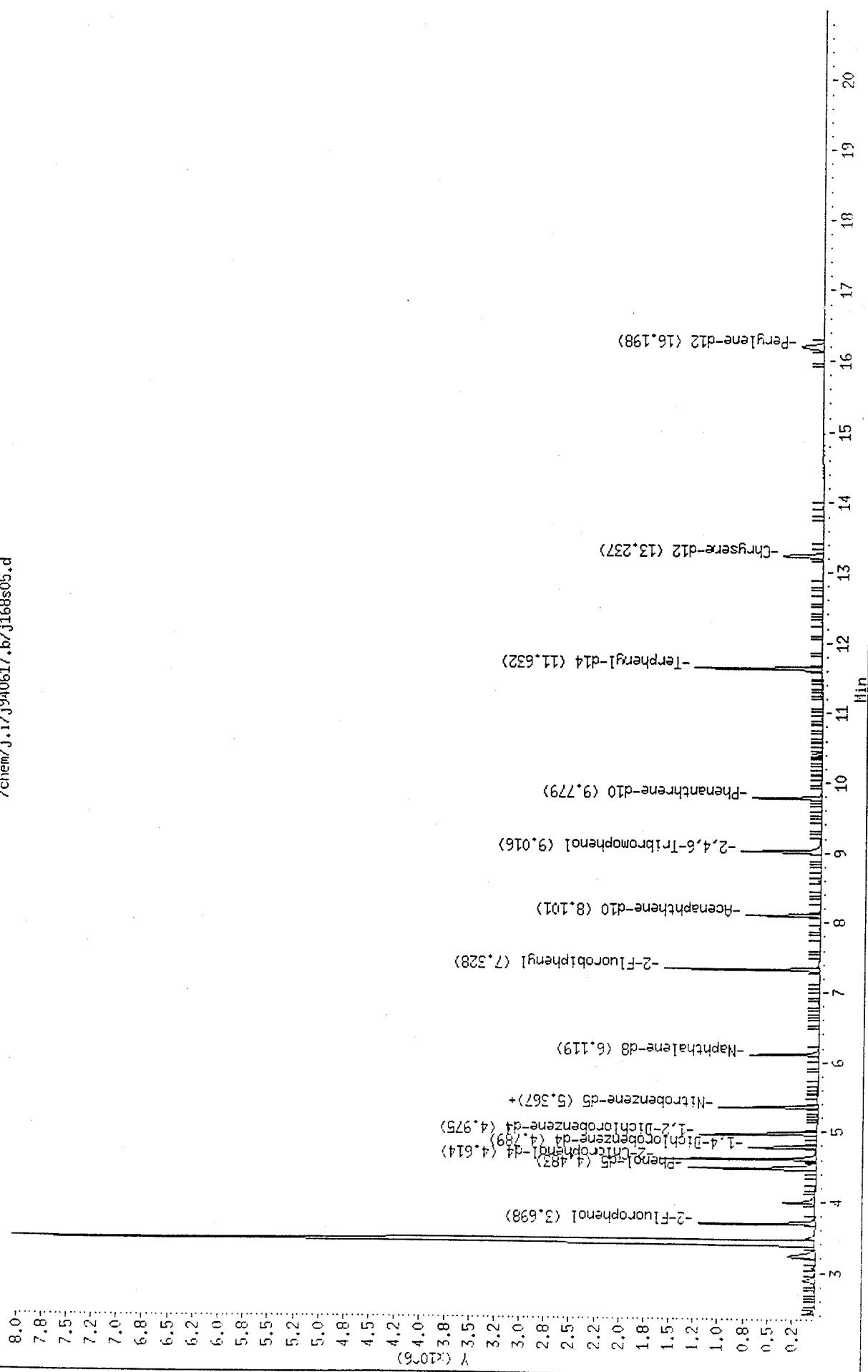
AREA LOWER LIMIT = - 50% of internal standard area.

RT UPPER LIMIT = + 0.50 minutes of internal standard RT.

RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168s05.d
Date : 17-JUN-1994 15:48
Instrument : j.i
Sample ID :
Column phase : J&M DB-5
Volume Injected (uL) : 2.0
Column diameter : 0.25

/chem/j.i./j940617.b/j168s05.d





Certificate of Analysis No. 9406119-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:50:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		
	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	330	µg/Kg
Benzo(g,h,i)Perylene	ND	1600	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl) Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl) Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-09

Operational Tech

SAMPLE ID: A-03 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 17:38:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s09.d

Lab. Id. :

Quant Type: ISTD

Inj Date : 17-JUN-94 17:38

Autotune Date: {

Operator : LH

Inst ID: j.i

Smp Info : 9406119-09B

Misc Info : 9406119-09B

Comment :

Method : /chem/j.i/j940617.b/jclps.m

Meth Date : 17-Jun-1994 14:44 liping

Cal Date : 17-JUN-1994 09:39

Cal File: j168cc1.d

Als bottle: 16

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: SOIL

Compounds	QUANT SIG	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN	FINAL
	MASS				ng)	(ug/Kg)
-----	----	--	-----	-----	-----	-----
S 3 2-Fluorophenol	112.00	3.698	(0.772)	514162	100	1700
S 5 Phenol-d5	99.00	4.483	(0.936)	623987	94	1600
S 8 2-Chlorophenol-d4	132.00	4.614	(0.963)	566234	96	1600
* 11 1,4-Dichlorobenzene-d4	152.00	4.789	(1.000)	138972	40	
S 13 1,2-Dichlorobenzene-d4	152.00	4.986	(0.615)	254255	64	1100
21 N-Nitroso-di-n-propylamine	70.00	5.367	(1.121)	64106	17	280 (aQ)
S 23 Nitrobenzene-d5	82.00	5.367	(0.877)	417315	68	1100
* 32 Naphthalene-d8	136.00	6.119	(1.000)	499294	40	
* 40 2-Fluorobiphenyl	172.00	7.329	(0.904)	707135	74	1200
* 48 Acenaphthene-d10	164.00	8.103	(1.000)	295630	40	
S 61 2,4,6-Tribromophenol	330.00	9.018	(0.922)	102156	77	1300 (Q)
* 65 Phenanthrene-d10	188.00	9.783	(1.000)	410258	40	
S 72 Terphenyl-d14	244.00	11.633	(0.879)	617124	69	1200
* 76 Chrysene-d12	240.00	13.234	(1.000)	261395	40	
* 93 Perylene-d12	264.00	16.197	(1.000)	255275	40	

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- Q - Qualifier signal failed the ratio test.

SPL Houston Labs

RECOVERY REPORT

Client Name: Client SDG: j940617.b
Sample Matrix: SOLID Fraction: SV
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: 8270s.spk Quant Type: ISTD
Method File: /chem/j.i/j940617.b/jclps.m
Misc Info: 9406119-09B

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 3 2-Fluorophenol	150	100	66.51	25-121
\$ 5 Phenol-d5	150	94	62.56	24-113
\$ 8 2-Chlorophenol-d4	150	96	64.37	20-130
\$ 13 1,2-Dichlorobenzen	100	64	64.45	20-130
\$ 23 Nitrobenzene-d5	100	68	68.09	23-120
\$ 40 2-Fluorobiphenyl	100	74	74.48	30-115
\$ 61 2,4,6-Tribromophen	150	77	51.08	19-122
\$ 72 Terphenyl-d14	100	69	69.02	18-137

* - Values outside of QC limits
Spike Recovery: 0 out of 8 outside limits
0 out of 8 not found

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s09.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-09B

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	121206	60603	242412	138972	14.66
32 Naphthalene-d8	445390	222695	890780	499294	12.10
48 Acenaphthene-d10	275750	137875	551500	295630	7.21
65 Phenanthrene-d10	336972	168486	673944	410268	21.75
76 Chrysene-d12	146532	73266	293064	261395	78.39
83 Perylene-d12	160474	80237	320948	255275	59.08

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.24
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.24
48 Acenaphthene-d10	8.12	7.62	8.62	8.10	-0.27
65 Phenanthrene-d10	9.79	9.29	10.29	9.78	-0.06
76 Chrysene-d12	13.26	12.76	13.76	13.23	-0.16
83 Perylene-d12	16.21	15.71	16.71	16.20	-0.07

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168s09.d

Date : 17-JUN-1994 17:38

Instrument : j.i

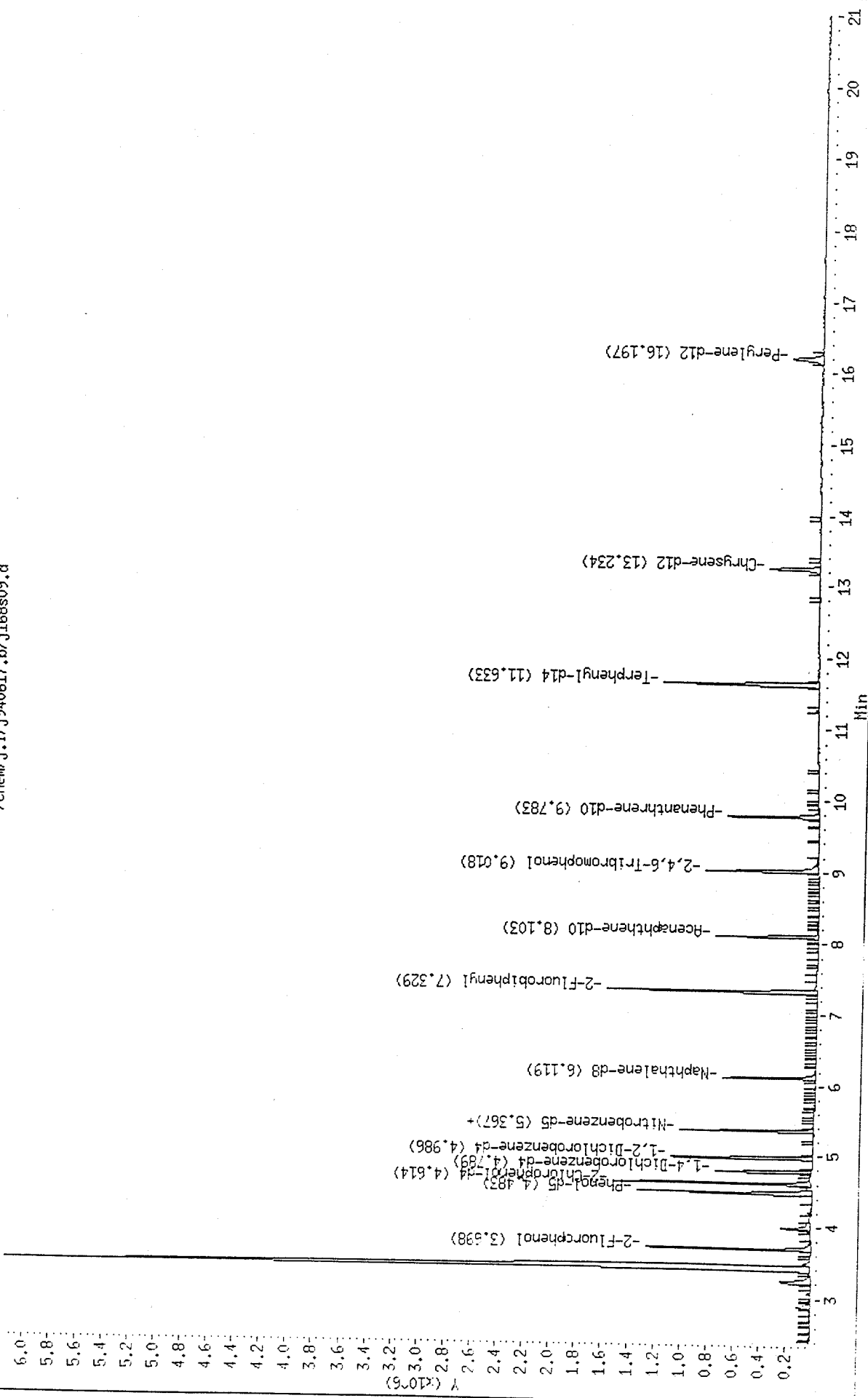
Sample ID :

Column phase : J&W DB-5

Volume Injected (uL) : 2.0

Column diameter : 0.25

/chem/j.i./j940617.b/j168s09.d





Certificate of Analysis No. 9406119-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:55:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		
	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	330	µg/Kg
Benzo(g,h,i)Perylene	ND	1600	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl)Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl)Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-10

Operational Tech

SAMPLE ID: A-03 BH Int.2

ANALYTICAL DATA (continued)			
PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 14:25:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s02.d
Lab. Id. :
Inj Date : 17-JUN-1994 14:25
Operator : LH
Smp Info : 9406119-10B
Misc Info : 9406119-10B
Comment :
Method : /chem/j.i/j940617.b/jclps.m
Meth Date : 17-Jun-1994 14:44 liping
Cal Date : 17-JUN-1994 09:39
Als bottle: 9
Dil Factor: 1.000
Integrator: HP RTE
Sample Matrix: SOIL

Quant Type: ISTD
Autotune Date: {
Inst ID: j.i
Cal File: j168cc1.d
Target Version: Target 3.00
Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/Kg)
-----	----		==	=====	-----	-----
\$ 3 2-Fluorophenol	112.00	3.687	(0.770)	494661	100	1700
\$ 5 Phenol-d5	99.00	4.483	(0.936)	596514	96	1600
\$ 8 2-Chlorophenol-d4	132.00	4.614	(0.964)	521651	95	1600
* 11 1,4-Dichlorobenzene-d4	152.00	4.789	(1.000)	129585	40	
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.975	(0.614)	239706	64	1000
21 N-Nitroso-di-n-propylamine	70.00	5.367	(1.121)	64327	18	300 (aQ)
\$ 23 Nitrobenzene-d5	82.00	5.367	(0.877)	396371	68	1100
* 32 Naphthalene-d8	136.00	6.119	(1.000)	474412	40	
\$ 40 2-Fluorobiphenyl	172.00	7.328	(0.904)	671901	74	1200
* 48 Acenaphthene-d10	164.00	8.102	(1.000)	282546	40	
\$ 61 2,4,6-Tribromophenol	330.00	9.017	(0.922)	137201	100	1700
* 65 Phenanthrene-d10	188.00	9.780	(1.000)	420180	40	
\$ 72 Terphenyl-d14	244.00	11.635	(0.879)	631251	72	1200
* 76 Chrysene-d12	240.00	13.230	(1.000)	256217	40	
* 83 Perylene-d12	264.00	16.195	(1.000)	240113	40	

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- Q - Qualifier signal failed the ratio test.

SPL Houston Labs

RECOVERY REPORT

Client Name: Client SDG: j940617.b
Sample Matrix: SOLID Fraction: SV
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: 8270s.spk Quant Type: ISTD
Method File: /chem/j.i/j940617.b/jclps.m
Misc Info: 9406119-10B

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
S 3 2-Fluorophenol	150	100	68.62	25-121
S 5 Phenol-d5	150	96	64.14	24-113
S 8 2-Chlorophenol-d4	150	95	63.60	20-130
S 13 1,2-Dichlorobenzene	100	64	63.57	20-130
S 23 Nitrobenzene-d5	100	68	68.06	23-120
S 40 2-Fluorobiphenyl	100	74	74.04	30-115
S 61 2,4,6-Tribromophen	150	100	66.98	19-122
S 72 Terphenyl-d14	100	72	72.03	18-137

* - Values outside of QC limits

Spike Recovery: 0 out of 8 outside limits
0 out of 8 not found

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s02.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-10B

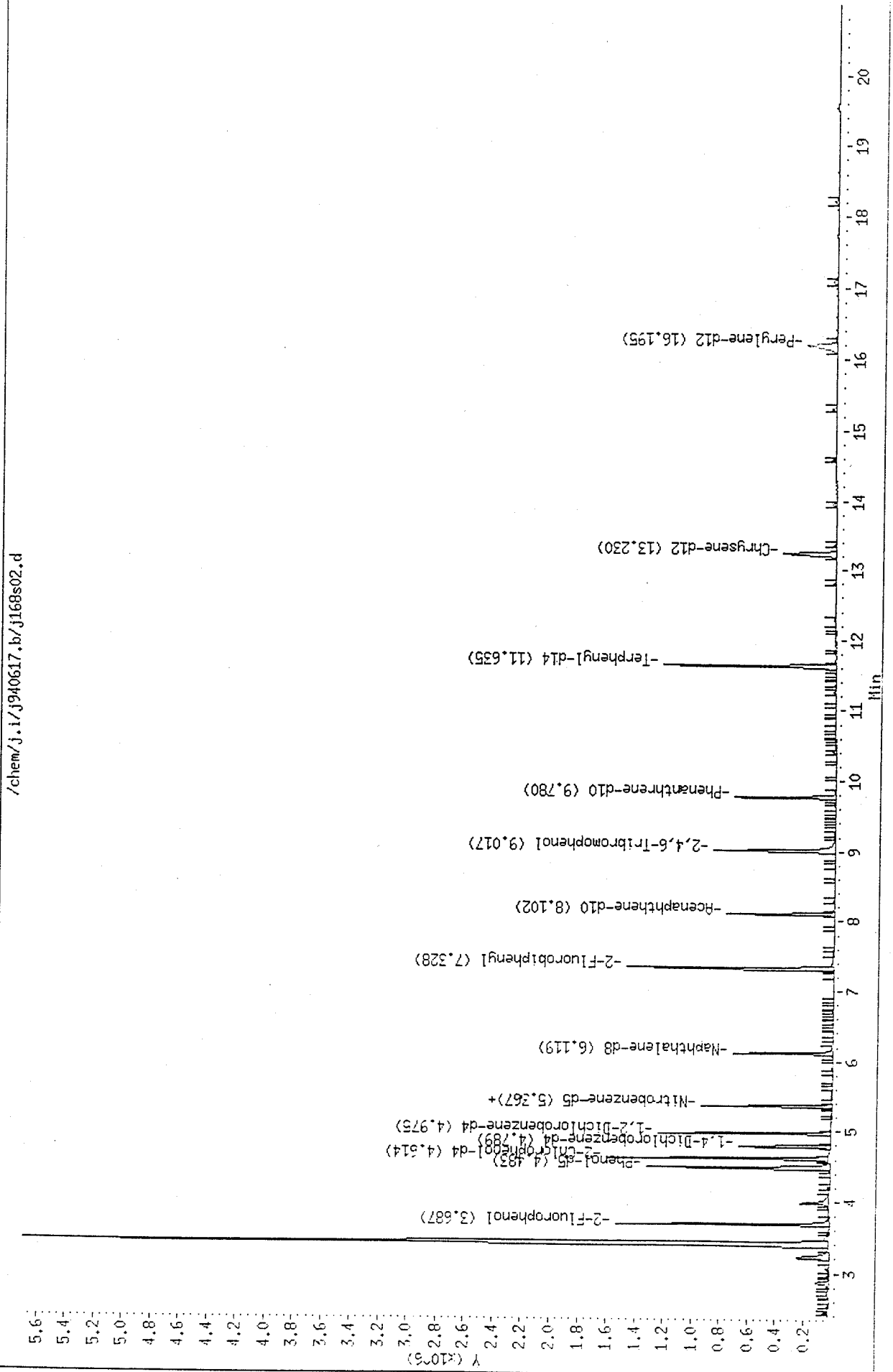
Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	121206	60603	242412	129585	6.91
32 Naphthalene-d8	445390	222695	890780	474412	6.52
48 Acenaphthene-d10	275750	137875	551500	282546	2.46
65 Phenanthrene-d10	336972	168486	673944	420180	24.69
76 Chrysene-d12	146532	73266	293064	256217	74.85
83 Perylene-d12	160474	80237	320948	240113	49.63

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.25
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.25
48 Acenaphthene-d10	8.12	7.62	8.62	8.10	-0.28
65 Phenanthrene-d10	9.79	9.29	10.29	9.78	-0.09
76 Chrysene-d12	13.26	12.76	13.76	13.23	-0.19
83 Perylene-d12	16.21	15.71	16.71	16.20	-0.08

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j940617.b/j168s02.d
 Date : 17-JUN-1994 14:25
 Instrument : j.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (uL) : 2.0
 Column diameter : 0.25





Certificate of Analysis No. 9406119-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:20:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	1600	µg/Kg
Acenaphthylene	ND	1600	µg/Kg
Aniline	ND	1600	µg/Kg
Anthracene	ND	1600	µg/Kg
Benzo(a)Anthracene	ND	1600	µg/Kg
Benzo(b)Fluoranthene	ND	1600	µg/Kg
Benzo(k)Fluoranthene	ND	1600	µg/Kg
Benzo(a)Pyrene	ND	1600	µg/Kg
Benzoic Acid	ND	8000	µg/Kg
Benzo(g,h,i)Perylene	ND	1600	µg/Kg
Benzyl alcohol	ND	1600	µg/Kg
4-Bromophenylphenyl ether	ND	1600	µg/Kg
Butylbenzylphthalate	ND	1600	µg/Kg
di-n-Butyl phthalate	ND	1600	µg/Kg
Carbazole	ND	1600	µg/Kg
4-Chloroaniline	ND	1600	µg/Kg
bis(2-Chloroethoxy)Methane	ND	1600	µg/Kg
bis(2-Chloroethyl)Ether	ND	1600	µg/Kg
bis(2-Chloroisopropyl)Ether	ND	1600	µg/Kg
4-Chloro-3-Methylphenol	ND	1600	µg/Kg
2-Chloronaphthalene	ND	1600	µg/Kg
2-Chlorophenol	ND	1600	µg/Kg
4-Chlorophenylphenyl ether	ND	1600	µg/Kg
Chrysene	ND	1600	µg/Kg
Dibenz(a,h)Anthracene	ND	1600	µg/Kg
Dibenzofuran	ND	1600	µg/Kg
1,2-Dichlorobenzene	ND	1600	µg/Kg
1,3-Dichlorobenzene	ND	1600	µg/Kg
1,4-Dichlorobenzene	ND	1600	µg/Kg
3,3'-Dichlorobenzidine	ND	1600	µg/Kg
2,4-Dichlorophenol	ND	1600	µg/Kg
Diethylphthalate	ND	1600	µg/Kg
2,4-Dimethylphenol	ND	1600	µg/Kg
Dimethyl Phthalate	ND	1600	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	4000	µg/Kg
2,4-Dinitrophenol	ND	4000	µg/Kg
2,4-Dinitrotoluene	ND	1600	µg/Kg
2,6-Dinitrotoluene	ND	1600	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-01

Operational Tech

SAMPLE ID: A-04 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	1600	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	1600	µg/Kg
Fluoranthene	ND	1600	µg/Kg
Fluorene	ND	1600	µg/Kg
Hexachlorobenzene	ND	1600	µg/Kg
Hexachlorobutadiene	ND	1600	µg/Kg
Hexachloroethane	ND	1600	µg/Kg
Hexachlorocyclopentadiene	ND	1600	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	1600	µg/Kg
Isophorone	ND	1600	µg/Kg
2-Methylnaphthalene	ND	1600	µg/Kg
2-Methylphenol	ND	1600	µg/Kg
4-Methylphenol	ND	1600	µg/Kg
Naphthalene	ND	1600	µg/Kg
2-Nitroaniline	ND	4000	µg/Kg
3-Nitroaniline	ND	4000	µg/Kg
4-Nitroaniline	ND	4000	µg/Kg
Nitrobenzene	ND	1600	µg/Kg
2-Nitrophenol	ND	1600	µg/Kg
4-Nitrophenol	ND	4000	µg/Kg
N-Nitrosodiphenylamine (1)	ND	1600	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	1600	µg/Kg
Di-n-Octyl Phthalate	ND	1600	µg/Kg
Pentachlorophenol	ND	4000	µg/Kg
Phenanthrene	ND	1600	µg/Kg
Phenol	ND	1600	µg/Kg
Pyrene	ND	1600	µg/Kg
Pyridine	ND	1600	µg/Kg
1,2,4-Trichlorobenzene	ND	1600	µg/Kg
2,4,5-Trichlorophenol	ND	4000	µg/Kg
2,4,6-Trichlorophenol	ND	1600	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 20:22:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s15.d

Lab. Id. :

Inj Date : 17-JUN-1994 20:22

Operator : LH

Smp Info : 9406119-01B 5X

Misc Info : 9406119-01B 5X

Comment :

Method : /chem/j.i/j940617.b/jclps.m

Meth Date : 17-Jun-1994 14:44 liping

Cal Date : 17-JUN-1994 09:39

Als bottle: 22

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: SOIL

Quant Type: ISTD

Autotune Date: {

Inst ID: j.i

Cal File: j168cc1.d

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN (ng)
						FINAL (ug/Kg)
-----	----	----	==	-----	-----	-----
\$ 3 2-Fluorophenol		112.00	3.685	(0.768)	109379	23 380
\$ 5 Phenol-d5		99.00	4.492	(0.936)	141000	23 380
\$ 8 2-Chlorophenol-d4		132.00	4.623	(0.964)	127874	23 390
* 11 1,4-Dichlorobenzene-d4		152.00	4.798	(1.000)	129620	40
\$ 13 1,2-Dichlorobenzene-d4		152.00	4.984	(0.614)	55829	19 310(a)
\$ 23 Nitrobenzene-d5		82.00	5.367	(0.875)	81636	16 260(a)
* 32 Naphthalene-d8		136.00	6.134	(1.000)	426664	40
\$ 40 2-Fluorobiphenyl		172.00	7.330	(0.904)	150142	21 350
* 48 Acenaphthene-d10		164.00	8.111	(1.000)	224780	40
\$ 61 2,4,6-Tribromophenol		330.00	9.029	(0.000)	8990	12 200(aM)
* 65 Phenanthrene-d10		188.00	9.795	(1.000)	225618	40
\$ 72 Terphenyl-d14		244.00	11.645	(0.877)	101295	12 190(a)
* 76 Chrysene-d12		240.00	13.281	(1.000)	256043	40
* 83 Perylene-d12		264.00	16.284	(1.000)	285481	40
84 Indeno(1,2,3-cd)pyrene		276.00	19.498	(1.197)	47917	4 76(a)
86 Benzo(g,h,i)perylene		276.00	20.466	(1.257)	52268	6 96(a)

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s15.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-01B 5X

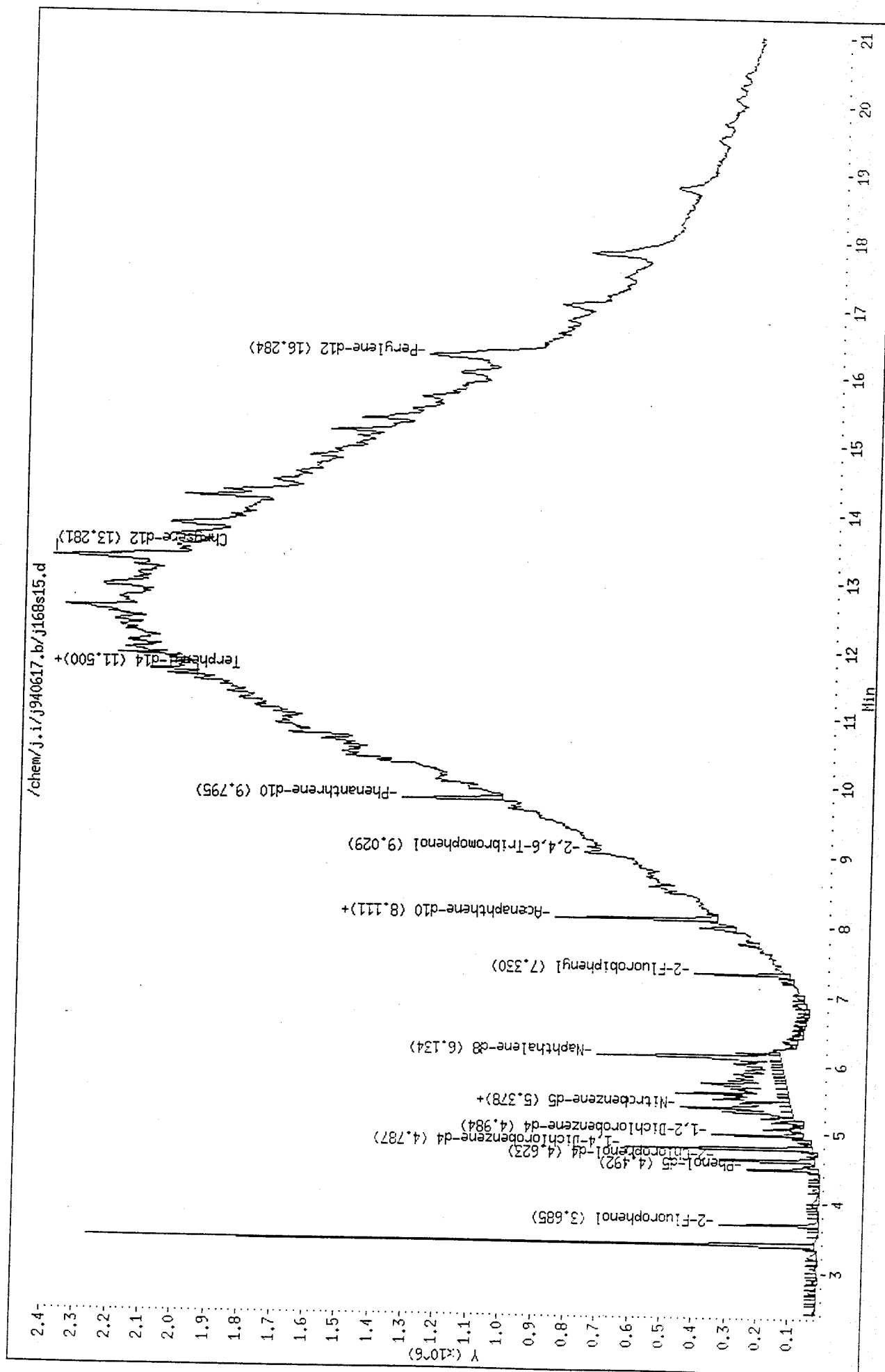
Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	121206	60603	242412	129620	6.94
32 Naphthalene-d8	445390	222695	890780	426664	-4.20
48 Acenaphthene-d10	275750	137875	551500	224780	-18.48
65 Phenanthrene-d10	336972	168486	673944	225618	-33.05
76 Chrysene-d12	146532	73266	293064	256043	74.74
83 Perylene-d12	160474	80237	320948	285481	77.90

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.80	-0.06
32 Naphthalene-d8	6.13	5.63	6.63	6.13	0.00
48 Acenaphthene-d10	8.12	7.62	8.62	8.11	-0.16
65 Phenanthrene-d10	9.79	9.29	10.29	9.79	0.06
76 Chrysene-d12	13.26	12.76	13.76	13.28	0.19
83 Perylene-d12	16.21	15.71	16.71	16.28	0.47

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.1/j940617.b/j168s15.d
 Date : 17-JUN-1994 20:22
 Instrument : j.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (uL) : 2.0
 Column diameter : 0.25





Certificate of Analysis No. 9406119-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:40:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
Benzo(g,h,i)Perylene	ND	330	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl)Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl)Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-02

Operational Tech

SAMPLE ID: A-04 BH Int.2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/13/94 18:13:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940613.b/j164s05.d

Lab. Id. : Quant Type: ISTD
Inj Date : 13-JUN-94 18:13 Autotune Date: {
Operator : LH Inst ID: j.i

Smp Info : 9406113-02B

Misc Info : 9406113-02B

Comment :

Method : /chem/j.i/j940613.b/jbna8.m

Meth Date : 13-JUN-1994 16:11 csadmin

Cal Date : 13-JUN-1994 14:28

Cal File: j164cc1.d

Als bottle: 8

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: WATER

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/L)
-----	----	==	=====	=====	-----	-----
S 3 2-Fluorophenol	112.00	3.074	(0.740)	379162	100	51
S 5 Phenol-d5	99.00	3.880	(0.934)	499658	110	55
S 8 2-Chlorophenol-d4	132.00	3.979	(0.958)	446785	100	51
* 11 1,4-Dichlorobenzene-d4	152.00	4.153	(1.000)	107236	40	
S 13 1,2-Dichlorobenzene-d4	152.00	4.339	(0.586)	214915	77	38
S 23 Nitrobenzene-d5	82.00	4.720	(0.864)	320676	73	37
* 32 Naphthalene-d8	136.00	5.460	(1.000)	369157	40	
S 40 2-Fluorobiphenyl	172.00	6.657	(0.899)	583705	81	41
* 48 Acenaphthene-d10	164.00	7.409	(1.000)	228978	40	
S 61 2,4,6-Tribromophenol	330.00	8.301	(0.918)	144027	120	58
* 65 Phenanthrene-d10	138.00	9.042	(1.000)	326726	40	
S 72 Terphenyl-d14	244.00	10.829	(0.886)	570145	80	40
* 76 Chrysene-d12	240.00	12.226	(1.000)	107212	40	
* 83 Perylene-d12	264.00	14.750	(1.000)	100442	40	

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j164s05.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940613.b/jbna8.m
 Misc Info: 9406119-02B

Calibration Date: 06/13/94
 Calibration Time: 1428
 Sample Type: WATER
 Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	85780	42890	171560	107236	25.01
32 Naphthalene-d8	329103	164551	658206	369157	12.17
48 Acenaphthene-d10	208681	104340	417362	228978	9.73
65 Phenanthrene-d10	281650	140825	563300	326726	16.00
76 Chrysene-d12	142982	71491	285964	207212	44.92
83 Perylene-d12	150259	75129	300518	200442	33.40

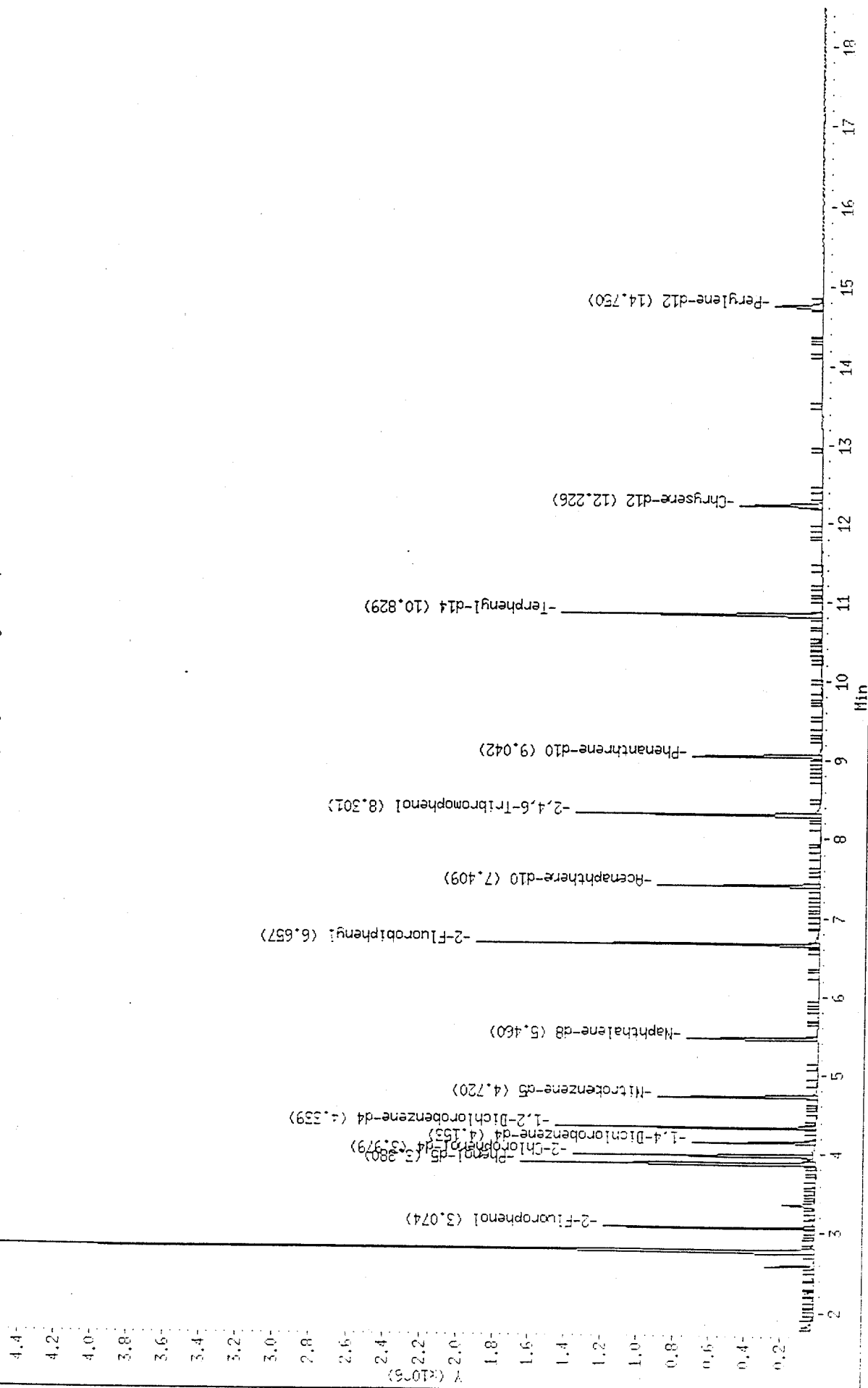
COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.15	3.65	4.65	4.15	0.05
32 Naphthalene-d8	5.47	4.97	5.97	5.46	-0.22
48 Acenaphthene-d10	7.42	6.92	7.92	7.41	-0.09
65 Phenanthrene-d10	9.06	8.56	9.56	9.04	-0.15
76 Chrysene-d12	12.24	11.74	12.74	12.23	-0.14
83 Perylene-d12	14.77	14.27	15.27	14.75	-0.12

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j940613.b/j164s05.d
 Date : 13-JUN-94 18:13
 Instrument : j.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (uL) : 2.0

Column diameter : 0.25

/chem/j.i/j940613.b/j164s05.d





Certificate of Analysis No. 9406119-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:15:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	660	µg/Kg
Acenaphthylene	ND	660	µg/Kg
Aniline	ND	660	µg/Kg
Anthracene	ND	660	µg/Kg
Benzo(a)Anthracene	ND	660	µg/Kg
Benzo(b)Fluoranthene	ND	660	µg/Kg
Benzo(k)Fluoranthene	ND	660	µg/Kg
Benzo(a)Pyrene	ND	660	µg/Kg
Benzoic Acid	ND	3200	µg/Kg
Benzo(g,h,i)Perylene	ND	660	µg/Kg
Benzyl alcohol	ND	660	µg/Kg
4-Bromophenylphenyl ether	ND	660	µg/Kg
Butylbenzylphthalate	ND	660	µg/Kg
di-n-Butyl phthalate	ND	660	µg/Kg
Carbazole	ND	660	µg/Kg
4-Chloroaniline	ND	660	µg/Kg
bis(2-Chloroethoxy)Methane	ND	660	µg/Kg
bis(2-Chloroethyl) Ether	ND	660	µg/Kg
bis(2-Chloroisopropyl) Ether	ND	660	µg/Kg
4-Chloro-3-Methylphenol	ND	660	µg/Kg
2-Chloronaphthalene	ND	660	µg/Kg
2-Chlorophenol	ND	660	µg/Kg
4-Chlorophenylphenyl ether	ND	660	µg/Kg
Chrysene	ND	660	µg/Kg
Dibenz(a,h)Anthracene	ND	660	µg/Kg
Dibenzofuran	ND	660	µg/Kg
1,2-Dichlorobenzene	ND	660	µg/Kg
1,3-Dichlorobenzene	ND	660	µg/Kg
1,4-Dichlorobenzene	ND	660	µg/Kg
3,3'-Dichlorobenzidine	ND	660	µg/Kg
2,4-Dichlorophenol	ND	660	µg/Kg
Diethylphthalate	ND	660	µg/Kg
2,4-Dimethylphenol	ND	660	µg/Kg
Dimethyl Phthalate	ND	660	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	1600	µg/Kg
2,4-Dinitrophenol	ND	1600	µg/Kg
2,4-Dinitrotoluene	ND	660	µg/Kg
2,6-Dinitrotoluene	ND	660	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-03

Operational Tech

SAMPLE ID: A-05 BH Int.1

ANALYTICAL DATA (continued)			
PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	660	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	660	µg/Kg
Fluoranthene	2000	660	µg/Kg
Fluorene	ND	660	µg/Kg
Hexachlorobenzene	ND	660	µg/Kg
Hexachlorobutadiene	ND	660	µg/Kg
Hexachloroethane	ND	660	µg/Kg
Hexachlorocyclopentadiene	ND	660	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	660	µg/Kg
Isophorone	ND	660	µg/Kg
2-Methylnaphthalene	ND	660	µg/Kg
2-Methylphenol	ND	660	µg/Kg
4-Methylphenol	ND	660	µg/Kg
Naphthalene	ND	660	µg/Kg
2-Nitroaniline	ND	1600	µg/Kg
3-Nitroaniline	ND	1600	µg/Kg
4-Nitroaniline	ND	1600	µg/Kg
Nitrobenzene	ND	660	µg/Kg
2-Nitrophenol	ND	660	µg/Kg
4-Nitrophenol	ND	1600	µg/Kg
N-Nitrosodiphenylamine (1)	ND	660	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	660	µg/Kg
Di-n-Octyl Phthalate	ND	660	µg/Kg
Pentachlorophenol	ND	1600	µg/Kg
Phenanthrene	920	660	µg/Kg
Phenol	ND	660	µg/Kg
Pyrene	720	660	µg/Kg
Pyridine	ND	660	µg/Kg
1,2,4-Trichlorobenzene	ND	660	µg/Kg
2,4,5-Trichlorophenol	ND	1600	µg/Kg
2,4,6-Trichlorophenol	ND	660	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 19:54:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s14.d

Lab. Id. : Quant Type: ISTD

Inj Date : 17-JUN-1994 19:54 Autotune Date: {

Operator : LH Inst ID: j.i

Smp Info : 9406119-03B 2X

Misc Info : 9406119-03B 2X

Comment :

Method : /chem/j.i/j940617.b/jclps.m

Meth Date : 17-Jun-1994 14:44 liping

Cal Date : 17-JUN-1994 09:39

Cal File: j168cc1.d

Als bottle: 21

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/Kg)
-----	----	----	--	-----	-----	-----
S 3 2-Fluorophenol	112.00	3.685	(0.770)	245364	53	390
S 5 Phenol-d5	99.00	4.482	(0.936)	305399	52	360
S 8 2-Chlorophenol-d4	132.00	4.613	(0.963)	276554	53	880
* 11 1,4-Dichlorobenzene-d4	152.00	4.788	(1.000)	123898	40	
S 13 1,2-Dichlorobenzene-d4	152.00	4.984	(0.615)	127830	37	610
S 23 Nitrobenzene-d5	82.00	5.366	(0.875)	214550	38	630
* 32 Naphthalene-d8	136.00	6.130	(1.000)	464098	40	
S 40 2-Fluorobiphenyl	172.00	7.331	(0.904)	378185	45	750
* 48 Acenaphthene-d10	164.00	8.109	(1.000)	261200	40	
S 51 2,4,6-Tribromophenol	330.00	9.032	(0.923)	24445	24	390(Q)
* 55 Phenanthrene-d10	188.00	9.784	(1.000)	319201	40	
56 Phenanthrene	178.00	9.806	(1.002)	302672	27 ✓	460
70 Fluoranthene	202.00	11.196	(1.144)	500087	61 ✓	1000
71 Pyrene	202.00	11.486	(0.865)	423892	21 ✓	360
S 72 Terphenyl-d14	244.00	11.643	(0.877)	367700	30	500
* 76 Chrysene-d12	240.00	13.277	(1.000)	355536	40	
* 83 Perylene-d12	264.00	16.292	(1.000)	376831	40	

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s14.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-03B 2X

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
=====	=====	=====	=====	=====	=====
11 1,4-Dichlorobenzene-	121206	60603	242412	123898	2.22
32 Naphthalene-d8	445390	222695	890780	464098	4.20
48 Acenaphthene-d10	275750	137875	551500	261200	-5.28
65 Phenanthrene-d10	336972	168486	673944	319201	-5.27
76 Chrysene-d12	146532	73266	293064	355536	142.63 <-
83 Perylene-d12	160474	80237	320948	376831	134.82 <-

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
=====	=====	=====	=====	=====	=====
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.28
32 Naphthalene-d8	6.13	5.63	6.63	6.13	-0.07
48 Acenaphthene-d10	8.12	7.62	8.62	8.11	-0.19
65 Phenanthrene-d10	9.79	9.29	10.29	9.78	-0.05
76 Chrysene-d12	13.26	12.76	13.76	13.28	0.16
83 Perylene-d12	16.21	15.71	16.71	16.29	0.52

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.1/j940617.s/j168s14.d

Page 4

Date : 17-JUN-1994 19:54

Instrument : j.i

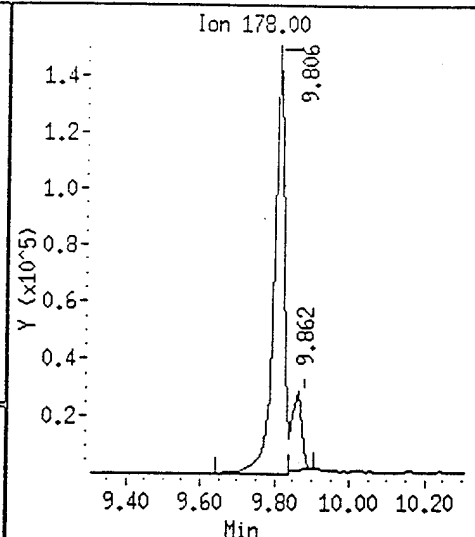
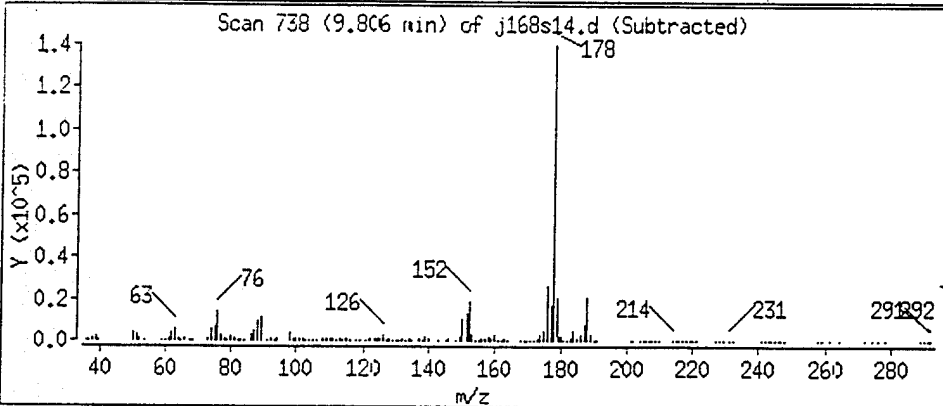
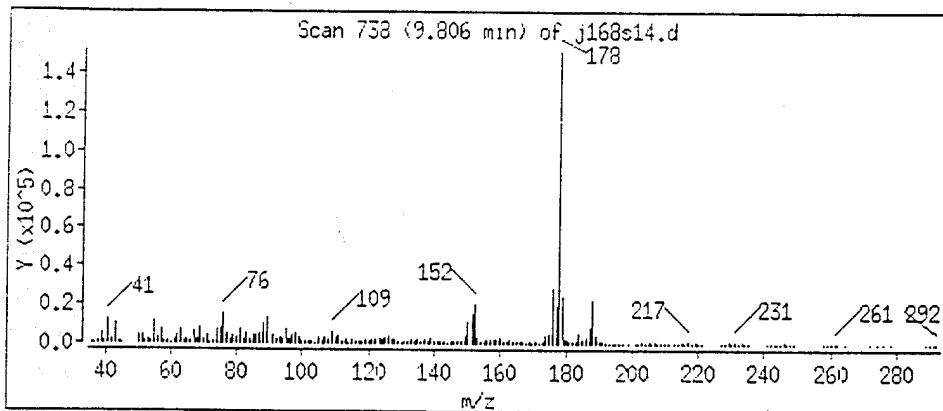
Sample ID :

Column phase : J&W DB-5

Column diameter : 0.25

Volume Injected (uL) : 2.0

66 Phenanthrene



Data File: /chem/j.1/j940617.b/j168s14.d

Page 5

Date: 17-JUN-1994 19:54

Instrument: J.I.

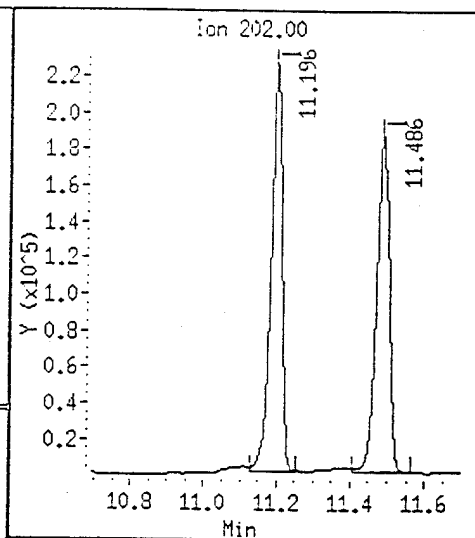
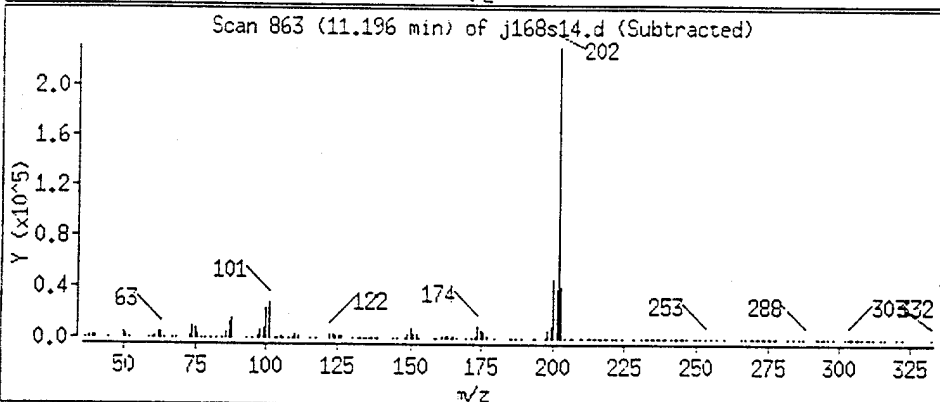
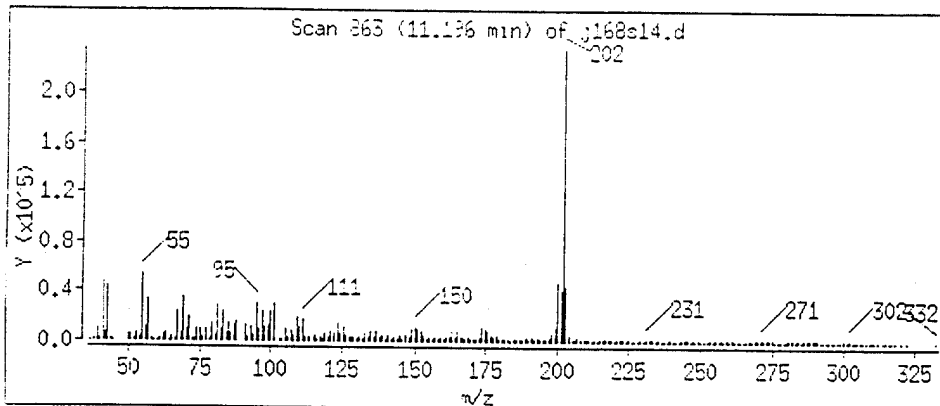
Sample ID:

Column phase: J&W DB-5

Column diameter: 0.25

Volume Injected (uL): 2.0

70 Fluoranthene



Data File: /chem/j.i/j940617.b/j168s14.d

Page 6

Date : 17-JUN-1994 19:54

Instrument : J.I.

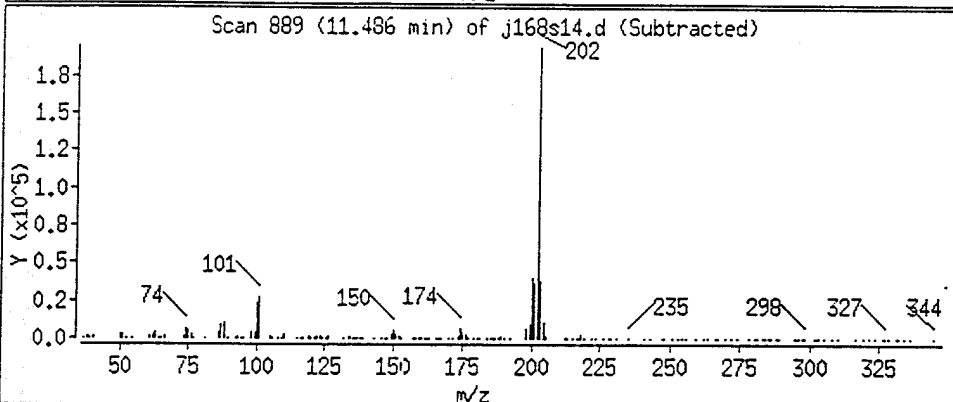
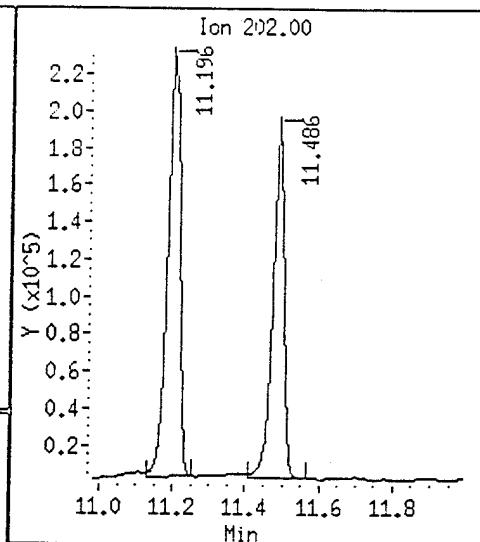
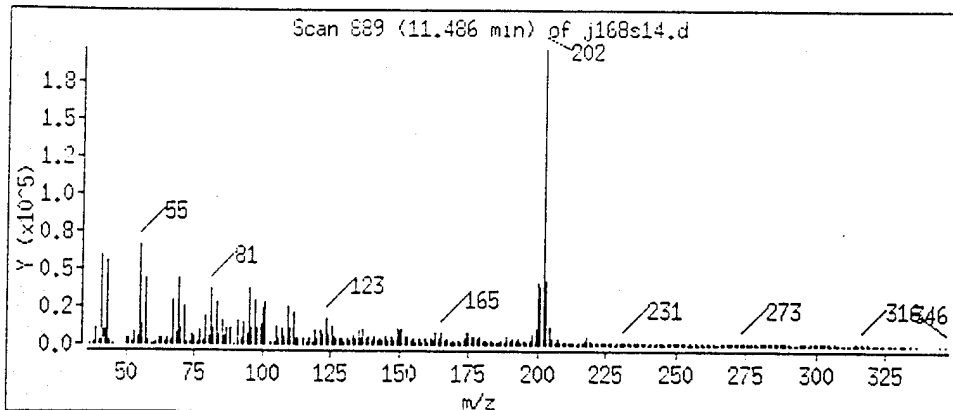
Sample ID :

Column phase : J&W DB-5

Column diameter : 0.25

Volume Injected (uL) : 2.0

71 Pyrene



Data File: /chem/j.i./j940617.b/j168s14.d

Date : 17-JUN-1994 19:54

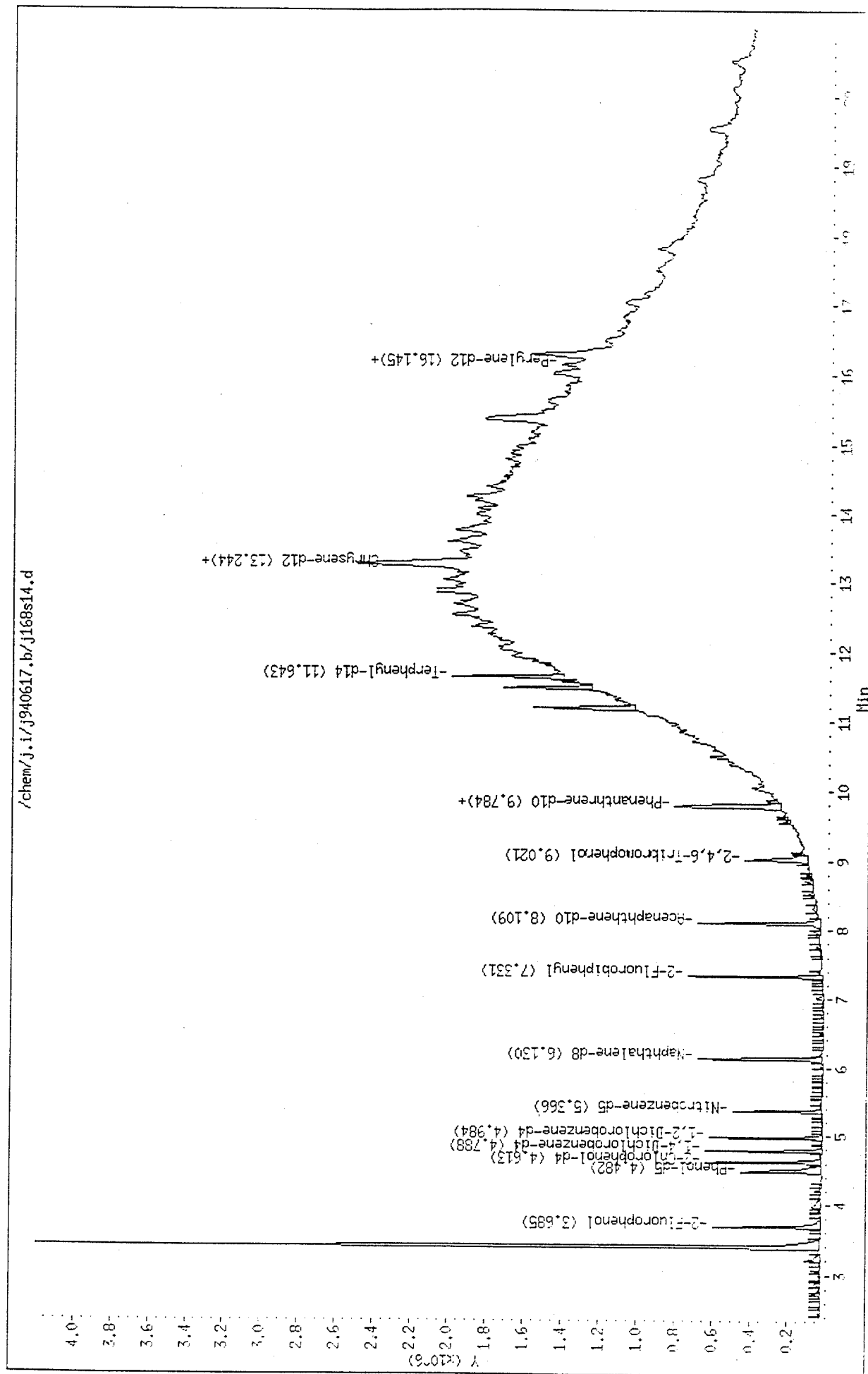
Instrument : j.i

Sample ID :

Column phase : J&W DB-5

Volume Injected (ul) : 2.0

Column diameter : 0.25



Date: B611903.T1

06/21/94 0:05:00

Sample: B270.406115...A-05, L.S. 9406119-03B, B.E. 30-1, 06/13 DE-2UL

Conds: CAP, 0620S2D1, 0620DFD1, ..., 40/4--300@10, INST D1

Formula: X5

Instrument: D1

Weight: 0.000

Submitted by:

Analyst: GLT

Acct. No.:

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

No	Name	
1	CI30 1,4-DICHLOROBENZENE-D4	*INTSTD*
2	CI40 NAPHTHALENE-D8	*INTSTD*
3	CI50 ACENAPHTHENE-D10	*INTSTD*
4	CI60 PHENANTHRENE-D10	*INTSTD*
5	CI70 CHRYSENE-D12	*INTSTD*
6	CI75 PERYLENE-D12	*INTSTD*
7	CS75 1,2-DICHLOROBENZENE-D4	*SURR*
8	CS20 NITROBENZENE-D5	*SURR*
9	CS25 2-FLUOROBIPHENYL	*SURR*
10	CS30 TERPHENYL-D14	*SURR*
11	CS50 2-FLUOROPHENOL	*SURR*
12	CS45 PHENOL-D5	*SURR*
13	CS70 2-CHLOROPHENOL-D4	*SURR*
14	CS55 2,4,6-TRIBROMOPHENOL	*SURR*
15	C261 PYRIDINE	
16	C310 N-NITROSODIMETHYLAMINE	
17	C315 PHENOL	
18	C320 ANILINE	
19	C325 BIS(2-CHLOROETHYL)ETHER	
20	C330 2-CHLOROPHENOL	
21	C335 1,3-DICHLOROBENZENE	
22	C340 1,4-DICHLOROBENZENE	
23	C345 BENZYL ALCOHOL	
24	C350 1,2-DICHLOROBENZENE	
25	C355 2-METHYLPHENOL	
26	C356 ORTHO-CRESOL	
27	C360 BIS(2-CHLOROISOPROPYL)ETHER	
28	C365 4-METHYLPHENOL	
29	C366 META, PARA-CRESOLS	
30	C370 N-NITROSO-DI-N-PROPYLAMINE	
31	C375 HEXACHLOROETHANE	
32	C410 NITROBENZENE	
33	C415 ISOPHORONE	
34	C420 2-NITROPHENOL	
35	C425 2,4-DIMETHYLPHENOL	
36	C430 BENZOIC ACID	
37	C435 BIS(2-CHLOROETHOXY)METHANE	
38	C440 2,4-DICHLOROPHENOL	
39	C445 1,2,4-TRICHLOROBENZENE	
40	C450 NAPHTHALENE	
41	C455 4-CHLOROANILINE	
42	C460 HEXACHLOROBUTADIENE	
43	C465 4-CHLORO-3-METHYLPHENOL	
44	C470 2-METHYLNAPHTHALENE	
45	C510 HEXACHLOROCYCLOPENTADIENE	
46	C515 2,4,6-TRICHLOROPHENOL	
47	C520 2,4,5-TRICHLOROPHENOL	

Too high confirmed matrix interference

TEST	DATE	TIME	AMOUNT	UNIT	RESULT	REFERENCE
1	10/1	10:00	100.00	NG/UL	100.00	100.00
2	10/1	10:05	100.00	NG/UL	100.00	100.00
3	10/1	10:10	100.00	NG/UL	100.00	100.00
4	10/1	10:15	100.00	NG/UL	100.00	100.00
5	10/1	10:20	100.00	NG/UL	100.00	100.00
6	10/1	10:25	100.00	NG/UL	100.00	100.00
7	10/1	10:30	100.00	NG/UL	100.00	100.00
8	10/1	10:35	100.00	NG/UL	100.00	100.00
9	10/1	10:40	100.00	NG/UL	100.00	100.00
10	10/1	10:45	100.00	NG/UL	100.00	100.00
11	10/1	10:50	100.00	NG/UL	100.00	100.00
12	10/1	10:55	100.00	NG/UL	100.00	100.00
13	10/1	11:00	100.00	NG/UL	100.00	100.00
14	10/1	11:05	100.00	NG/UL	100.00	100.00
15	10/1	11:10	100.00	NG/UL	100.00	100.00
16	10/1	11:15	100.00	NG/UL	100.00	100.00
17	10/1	11:20	100.00	NG/UL	100.00	100.00
18	10/1	11:25	100.00	NG/UL	100.00	100.00
19	10/1	11:30	100.00	NG/UL	100.00	100.00
20	10/1	11:35	100.00	NG/UL	100.00	100.00
21	10/1	11:40	100.00	NG/UL	100.00	100.00
22	10/1	11:45	100.00	NG/UL	100.00	100.00
23	10/1	11:50	100.00	NG/UL	100.00	100.00
24	10/1	11:55	100.00	NG/UL	100.00	100.00
25	10/1	12:00	100.00	NG/UL	100.00	100.00
26	10/1	12:05	100.00	NG/UL	100.00	100.00
27	10/1	12:10	100.00	NG/UL	100.00	100.00
28	10/1	12:15	100.00	NG/UL	100.00	100.00
29	10/1	12:20	100.00	NG/UL	100.00	100.00
30	10/1	12:25	100.00	NG/UL	100.00	100.00
31	10/1	12:30	100.00	NG/UL	100.00	100.00
32	10/1	12:35	100.00	NG/UL	100.00	100.00
33	10/1	12:40	100.00	NG/UL	100.00	100.00
34	10/1	12:45	100.00	NG/UL	100.00	100.00
35	10/1	12:50	100.00	NG/UL	100.00	100.00
36	10/1	12:55	100.00	NG/UL	100.00	100.00
37	10/1	1:00	100.00	NG/UL	100.00	100.00
38	10/1	1:05	100.00	NG/UL	100.00	100.00
39	10/1	1:10	100.00	NG/UL	100.00	100.00
40	10/1	1:15	100.00	NG/UL	100.00	100.00
41	10/1	1:20	100.00	NG/UL	100.00	100.00
42	10/1	1:25	100.00	NG/UL	100.00	100.00
43	10/1	1:30	100.00	NG/UL	100.00	100.00
44	10/1	1:35	100.00	NG/UL	100.00	100.00
45	10/1	1:40	100.00	NG/UL	100.00	100.00
46	10/1	1:45	100.00	NG/UL	100.00	100.00
47	10/1	1:50	100.00	NG/UL	100.00	100.00
48	10/1	1:55	100.00	NG/UL	100.00	100.00
49	10/1	2:00	100.00	NG/UL	100.00	100.00
50	10/1	2:05	100.00	NG/UL	100.00	100.00

Item	Unit	Cost	Quantity	Price	Value	Ratio
100	1.00	1.00	25.00	0.000	1.000	0.00
101	1.00	1.00	25.00	0.000	1.000	0.00
102	1.00	1.00	25.00	0.000	1.000	0.00
103	1.00	1.00	25.00	0.000	1.000	0.00
104	1.00	1.00	25.00	0.000	1.000	0.00
105	1.00	1.00	25.00	0.000	1.000	0.00
106	1.00	1.00	25.00	0.000	1.000	0.00
107	1.00	1.00	25.00	0.000	1.000	0.00
108	1.00	1.00	25.00	0.000	1.000	0.00
109	1.00	1.00	25.00	0.000	1.000	0.00
110	1.00	1.00	25.00	0.000	1.000	0.00
111	1.00	1.00	25.00	0.000	1.000	0.00
112	1.00	1.00	25.00	0.000	1.000	0.00
113	1.00	1.00	25.00	0.000	1.000	0.00
114	1.00	1.00	25.00	0.000	1.000	0.00
115	1.00	1.00	25.00	0.000	1.000	0.00
116	1.00	1.00	25.00	0.000	1.000	0.00
117	1.00	1.00	25.00	0.000	1.000	0.00
118	1.00	1.00	25.00	0.000	1.000	0.00
119	1.00	1.00	25.00	0.000	1.000	0.00
120	1.00	1.00	25.00	0.000	1.000	0.00
121	1.00	1.00	25.00	0.000	1.000	0.00
122	1.00	1.00	25.00	0.000	1.000	0.00
123	1.00	1.00	25.00	0.000	1.000	0.00
124	1.00	1.00	25.00	0.000	1.000	0.00
125	1.00	1.00	25.00	0.000	1.000	0.00
126	1.00	1.00	25.00	0.000	1.000	0.00
127	1.00	1.00	25.00	0.000	1.000	0.00
128	1.00	1.00	25.00	0.000	1.000	0.00
129	1.00	1.00	25.00	0.000	1.000	0.00
130	1.00	1.00	25.00	0.000	1.000	0.00
131	1.00	1.00	25.00	0.000	1.000	0.00
132	1.00	1.00	25.00	0.000	1.000	0.00
133	1.00	1.00	25.00	0.000	1.000	0.00
134	1.00	1.00	25.00	0.000	1.000	0.00
135	1.00	1.00	25.00	0.000	1.000	0.00
136	1.00	1.00	25.00	0.000	1.000	0.00
137	1.00	1.00	25.00	0.000	1.000	0.00
138	1.00	1.00	25.00	0.000	1.000	0.00
139	1.00	1.00	25.00	0.000	1.000	0.00
140	1.00	1.00	25.00	0.000	1.000	0.00
141	1.00	1.00	25.00	0.000	1.000	0.00
142	1.00	1.00	25.00	0.000	1.000	0.00
143	1.00	1.00	25.00	0.000	1.000	0.00
144	1.00	1.00	25.00	0.000	1.000	0.00
145	1.00	1.00	25.00	0.000	1.000	0.00
146	1.00	1.00	25.00	0.000	1.000	0.00
147	1.00	1.00	25.00	0.000	1.000	0.00
148	1.00	1.00	25.00	0.000	1.000	0.00
149	1.00	1.00	25.00	0.000	1.000	0.00
150	1.00	1.00	25.00	0.000	1.000	0.00

R10
 05/21/94 9:05:00
 DATA: B611903 #1
 CALI: B611903 #3
 SAMPLE: 8270.405113, 0-05.L, 5.9405113-020.8.E, 30-1.05/13 DE-2UL
 COND5.: CAP.05205201.06200F01, ..., 40/4--300010.INST 01
 RANGE: 6 1.2310 LABEL: H 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



R1C
 06/21/94 09:06:00
 DATA: 0611903 #1
 CALL: 0611903 #3
 SAMPLE: 0.279, 405113, 0.05, L.S. 3006113-0.36, B.E. 30-1.06/13 DE-2UL
 COMDS.: CAP, 06205201, 06200FD1, 0.0, 40.4, 300610, HET D1
 RANGE: 0 1.2310 LABEL: H 0. 4.0 QMUL: A 0. 1.0 J 0 BASE: U 20. 3
 1843

45.2666

100.0

1637

1780

1725, 1700, 1675, 1650, 1625, 1600, 1575, 1550, 1525, 1500, 1475, 1450, 1425, 1400, 1375, 1350, 1325, 1300, 1275, 1250, 1225, 1200, 1175, 1150, 1125, 1100, 1075, 1050, 1025, 1000, 975, 950, 925, 900, 875, 850, 825, 800, 775, 750, 725, 700, 675, 650, 625, 600, 575, 550, 525, 500, 475, 450, 425, 400, 375, 350, 325, 300, 275, 250, 225, 200, 175, 150, 125, 100, 75, 50, 25, 0

1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400
 33:20 35:00 36:40 38:20 40:00 41:40 43:20 45:00 46:40 48:20 50:00
 TIME



Certificate of Analysis No. 9406119-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:18:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
Benzo(g,h,i)Perylene	ND	330	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl)Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl)Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-04

Operational Tech

SAMPLE ID: A-05 BH Int.2

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/13/94 18:37:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940613.b/j164s06.d

Lab. Id. :

Quant Type: ISTD

Inj Date : 13-JUN-94 18:37

Autotune Date: {

Operator : LH

Inst ID: j.i

Smp Info : 9406119-04B

Misc Info : 9406119-04B

Comment :

Method : /chem/j.i/j940613.b/jbna8.m

Meth Date : 13-Jun-1994 16:11 csadmin

Cal Date : 13-JUN-1994 14:28

Cal File: j164cc1.d

Als bottle: 9

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: WATER

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	ON-COLUMN (ng)	FINAL (ug/L)
=====	----		==	-----	-----	-----
\$ 3 2-Fluorophenol		112.00	3.063	(0.737)	406542	110 55
\$ 5 Phenol-d5		99.00	3.880	(0.934)	506871	110 56
\$ 8 2-Chlorophenol-d4		132.00	3.979	(0.958)	466149	110 54
* 11 1,4-Dichlorobenzene-d4		152.00	4.153	(1.000)	106791	40
\$ 13 1,2-Dichlorobenzene-d4		152.00	4.339	(0.586)	223939	77 39
\$ 23 Nitrobenzene-d5		82.00	4.720	(0.864)	331748	73 36
* 32 Naphthalene-d8		136.00	5.460	(1.000)	383119	40
\$ 40 2-Fluorobiphenyl		172.00	6.658	(0.899)	615929	83 42
* 48 Acenaphthene-d10		164.00	7.409	(1.000)	236338	40
\$ 61 2,4,6-Tribromophenol		330.00	8.312	(0.919)	49351	38 19(Q)
* 65 Phenanthrene-d10		188.00	9.042	(1.000)	335545	40
\$ 72 Terphenyl-d14		244.00	10.828	(0.886)	618773	79 39
* 76 Chrysene-d12		240.00	12.225	(1.000)	228866	40
* 83 Perylene-d12		264.00	14.747	(1.000)	226314	40

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j164s06.d
Lab Sample ID:
Analysis Type: SV
Quant Type: ISTD
Method File: /chem/j.i/j940613.b/jbna8.m
Misc Info: 9406119-04B

Calibration Date: 06/13/94
Calibration Time: 1428
Sample Type: WATER
Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	85780	42890	171560	106791	24.49
32 Naphthalene-d8	329103	164551	658206	383119	16.41
48 Acenaphthene-d10	208681	104340	417362	236338	13.25
65 Phenanthrene-d10	281650	140825	563300	335545	19.14
76 Chrysene-d12	142982	71491	285964	228866	60.07
83 Perylene-d12	150259	75129	300518	226314	50.62

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	4.15	3.65	4.65	4.15	0.05
32 Naphthalene-d8	5.47	4.97	5.97	5.46	-0.22
48 Acenaphthene-d10	7.42	6.92	7.92	7.41	-0.09
65 Phenanthrene-d10	9.06	8.56	9.56	9.04	-0.16
76 Chrysene-d12	12.24	11.74	12.74	12.22	-0.16
83 Perylene-d12	14.77	14.27	15.27	14.75	-0.14

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168s10.d

Date : 17-JUN-1994 18:05

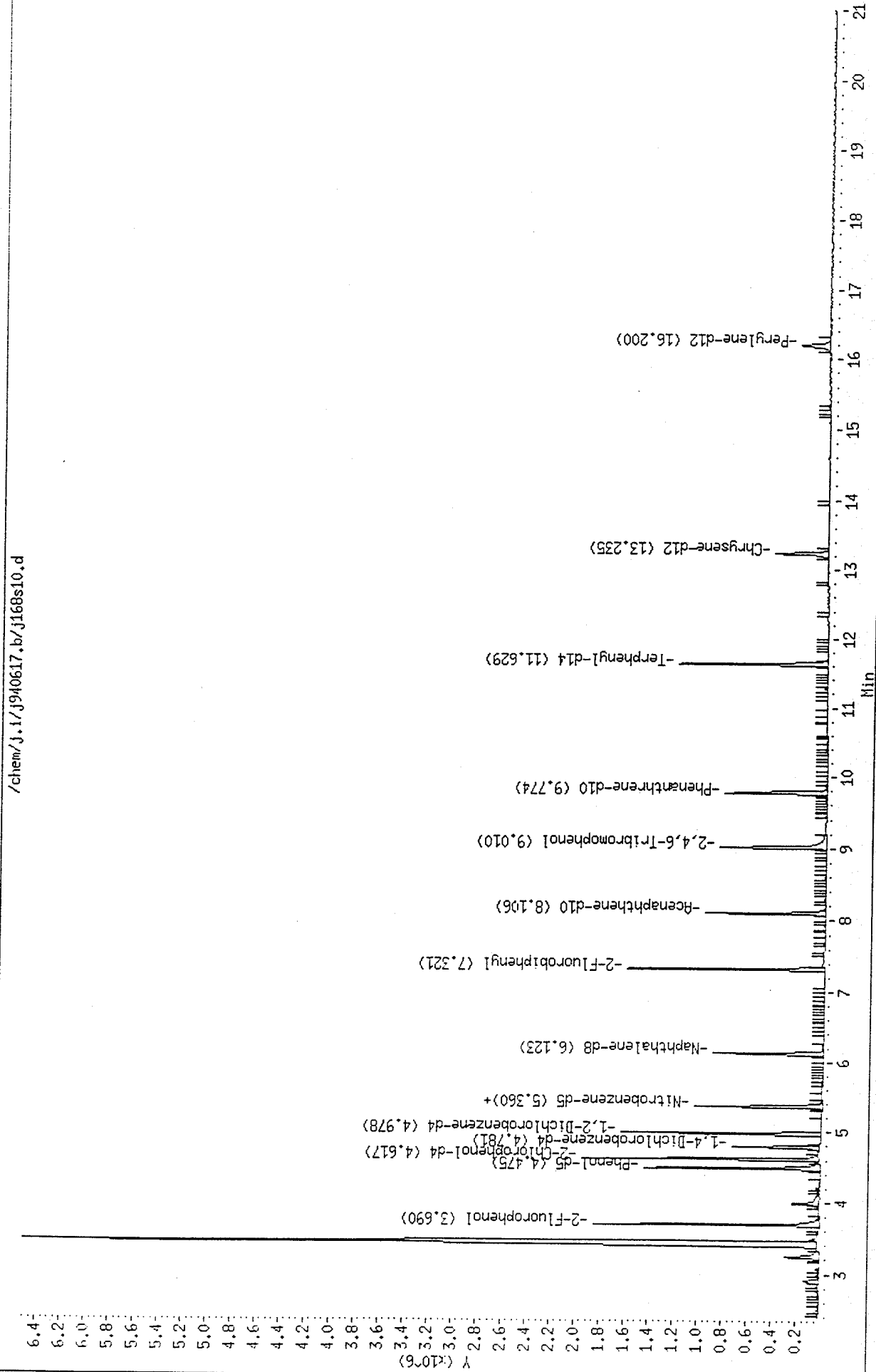
Instrument : j.i

Sample ID :

Column phase : J&W DB-5

Volume Injected (ul) : 2.0

Column diameter : 0.25



Data File: /chem/j.i./j940613.b/j164s06.d

Date : 13-JUN-94 18:37

Instrument : J.i

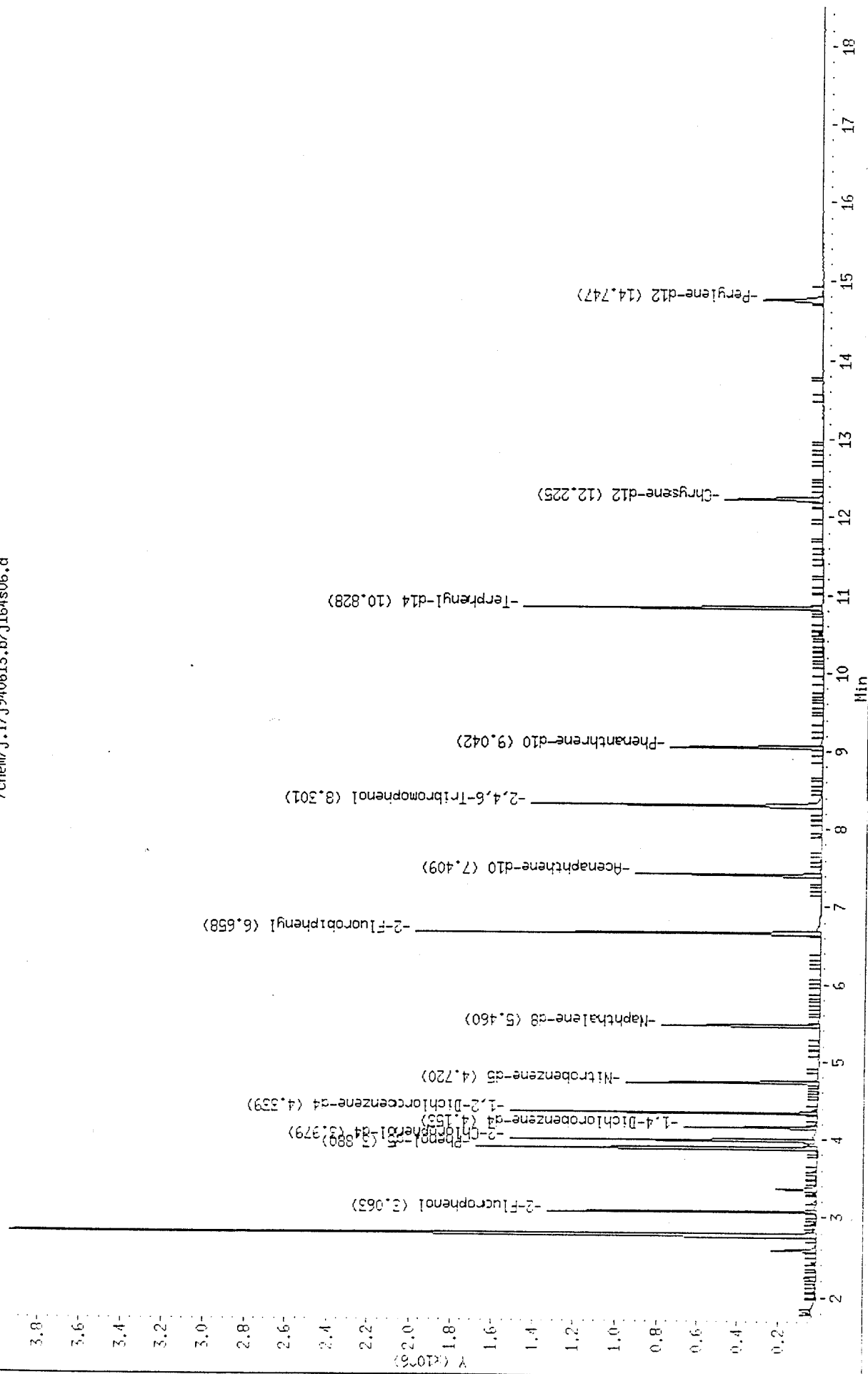
Sample ID :

Column phase : J&W DB-5

Volume Injected (ul) : 2.0

Column diameter : 0.25

/chem/j.i./j940613.b/j164s06.d





Certificate of Analysis No. 9406119-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:50:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		
	RESULTS	PQL*	UNITS
Acenaphthene	ND	1600	µg/Kg
Acenaphthylene	ND	1600	µg/Kg
Aniline	ND	1600	µg/Kg
Anthracene	ND	1600	µg/Kg
Benzo(a)Anthracene	2200	1600	µg/Kg
Benzo(b)Fluoranthene	1700	1600	µg/Kg
Benzo(k)Fluoranthene	1800	1600	µg/Kg
Benzo(a)Pyrene	2100	1600	µg/Kg
Benzoic Acid	ND	8000	µg/Kg
Benzo(g,h,i)Perylene	ND	1600	µg/Kg
Benzyl alcohol	ND	1600	µg/Kg
4-Bromophenylphenyl ether	ND	1600	µg/Kg
Butylbenzylphthalate	ND	1600	µg/Kg
di-n-Butyl phthalate	ND	1600	µg/Kg
Carbazole	ND	1600	µg/Kg
4-Chloroaniline	ND	1600	µg/Kg
bis(2-Chloroethoxy)Methane	ND	1600	µg/Kg
bis(2-Chloroethyl)Ether	ND	1600	µg/Kg
bis(2-Chloroisopropyl)Ether	ND	1600	µg/Kg
4-Chloro-3-Methylphenol	ND	1600	µg/Kg
2-Chloronaphthalene	ND	1600	µg/Kg
2-Chlorophenol	ND	1600	µg/Kg
4-Chlorophenylphenyl ether	ND	1600	µg/Kg
Chrysene	1800	1600	µg/Kg
Dibenz(a,h)Anthracene	ND	1600	µg/Kg
Dibenzofuran	ND	1600	µg/Kg
1,2-Dichlorobenzene	ND	1600	µg/Kg
1,3-Dichlorobenzene	ND	1600	µg/Kg
1,4-Dichlorobenzene	ND	1600	µg/Kg
3,3'-Dichlorobenzidine	ND	1600	µg/Kg
2,4-Dichlorophenol	ND	1600	µg/Kg
Diethylphthalate	ND	1600	µg/Kg
2,4-Dimethylphenol	ND	1600	µg/Kg
Dimethyl Phthalate	ND	1600	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	4000	µg/Kg
2,4-Dinitrophenol	ND	4000	µg/Kg
2,4-Dinitrotoluene	ND	1600	µg/Kg
2,6-Dinitrotoluene	ND	1600	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-05

Operational Tech

SAMPLE ID: A-06 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	1600	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	1600	µg/Kg
Fluoranthene	4000	1600	µg/Kg
Fluorene	ND	1600	µg/Kg
Hexachlorobenzene	ND	1600	µg/Kg
Hexachlorobutadiene	ND	1600	µg/Kg
Hexachloroethane	ND	1600	µg/Kg
Hexachlorocyclopentadiene	ND	1600	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	1600	µg/Kg
Isophorone	ND	1600	µg/Kg
2-Methylnaphthalene	ND	1600	µg/Kg
2-Methylphenol	ND	1600	µg/Kg
4-Methylphenol	ND	1600	µg/Kg
Naphthalene	ND	1600	µg/Kg
2-Nitroaniline	ND	4000	µg/Kg
3-Nitroaniline	ND	4000	µg/Kg
4-Nitroaniline	ND	4000	µg/Kg
Nitrobenzene	ND	1600	µg/Kg
2-Nitrophenol	ND	1600	µg/Kg
4-Nitrophenol	ND	4000	µg/Kg
N-Nitrosodiphenylamine (1)	ND	1600	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	1600	µg/Kg
Di-n-Octyl Phthalate	ND	1600	µg/Kg
Pentachlorophenol	ND	4000	µg/Kg
Phenanthrene	ND	1600	µg/Kg
Phenol	ND	1600	µg/Kg
Pyrene	2500	1600	µg/Kg
Pyridine	ND	1600	µg/Kg
1,2,4-Trichlorobenzene	ND	1600	µg/Kg
2,4,5-Trichlorophenol	ND	4000	µg/Kg
2,4,6-Trichlorophenol	ND	1600	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 19:27:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s13.d

Lab. Id. :

Quant Type: ISTD

Inj Date : 17-JUN-1994 19:27

Autotune Date: {

Operator : LH

Inst ID: j.i

Smp Info : 9406119-05B 5X

Misc Info : 9406119-05B 5X

Comment :

Method : /chem/j.i/j940617.b/jclps.m

Meth Date : 17-Jun-1994 14:44 liping

Cal Date : 17-JUN-1994 09:39

Cal File: j168cc1.d

Als bottle: 20

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: SOIL

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/Kg)
-----	----	----	--	-----	-----	-----
\$ 3 2-Fluorophenol		112.00	3.683	(0.768)	86520	17 290 (a)
\$ 5 Phenol-d5		99.00	4.478	(0.934)	123273	19 320 (a)
\$ 8 2-Chlorophenol-d4		132.00	4.620	(0.964)	105717	18 310 (a)
* 11 1,4-Dichlorobenzene-d4		152.00	4.795	(1.000)	135233	40
\$ 13 1,2-Dichlorobenzene-d4		152.00	4.980	(0.614)	46858	11 190 (a)
\$ 23 Nitrobenzene-d5		82.00	5.362	(0.876)	77632	13 210 (a)
* 32 Naphthalene-d8		136.00	6.124	(1.000)	501243	40
\$ 40 2-Fluorobiphenyl		172.00	7.332	(0.905)	161383	16 270 (a)
* 48 Acenaphthene-d10		164.00	8.105	(1.000)	306012	40
\$ 61 2,4,6-Tribromophenol		330.00	9.020	(0.923)	8890	7 120 (aQ)
* 65 Phenanthrene-d10		188.00	9.773	(1.000)	374400	40
70 Fluoranthene		202.00	11.186	(1.145)	465803	48 ✓ 810
71 Pyrene		202.00	11.471	(0.866)	393555	31 ✓ 520
\$ 72 Terphenyl-d14		244.00	11.625	(0.878)	97729	13 210 (a)
75 Benzo[a]anthracene		228.00	13.211	(0.997)	214596	26 ✓ 430
* 76 Chrysene-d12		240.00	13.244	(1.000)	226260	40
78 Chrysene		228.00	13.277	(1.002)	175508	22 ✓ 360
80 Benzo[b]fluoranthene		252.00	15.327	(0.946)	211817	20 ✓ 340 (M)
81 Benzo[k]fluoranthene		252.00	15.338	(0.946)	205519	21 ✓ 350 (M)
82 Benzo[a]pyrene		252.00	16.066	(0.991)	222875	25 ✓ 420
* 83 Perylene-d12		264.00	16.210	(1.000)	288701	40
84 Indeno[1,2,3-cd]pyrene		276.00	19.420	(1.198)	160730	15 250 (a)
86 Benzo[g,h,i]perylene		276.00	20.389	(1.258)	141553	15 260 (a)

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- Q - Qualifier signal failed the ratio test.

Data File: /chem/j.i/j940617.b/j168s13.d
Report Date: 20-Jun-1994 08:52

Page 2

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/.../j940617.5/j168s13.d

Date : 17-JUN-1994 19:27

Instrument : j.1

Sample ID :

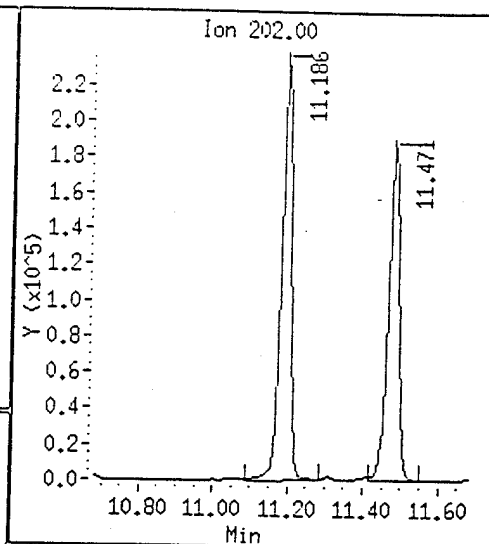
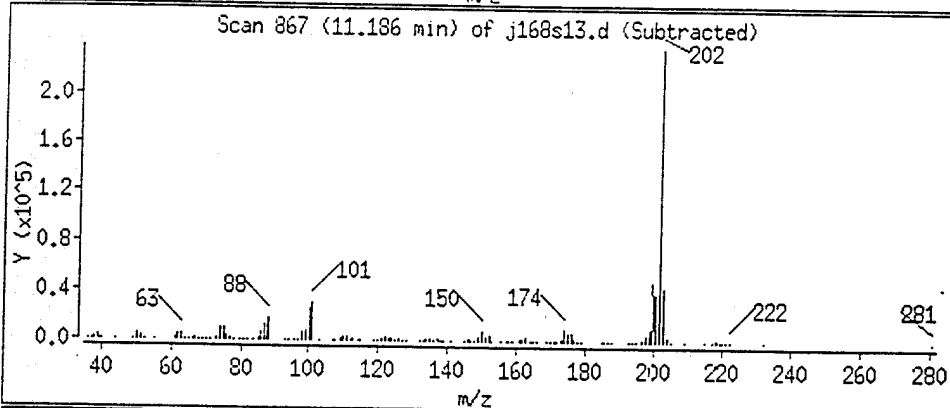
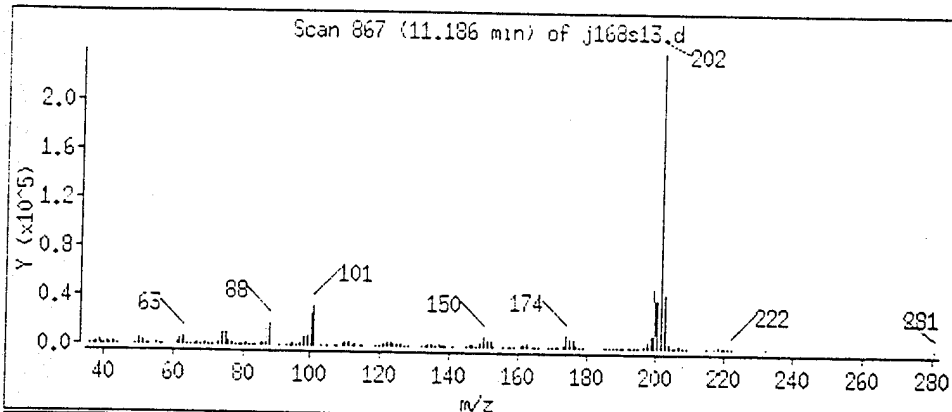
Column phase : J&W DB-5

Column diameter : 0.25

Volume Injected (μL) : 2.0

Page 5

70 Fluoranthene



Data File: /chem/g.../j940617.b/j168s13.d

Page 6

Date : 17-JUN-1994 19:27

Instrument : j.i

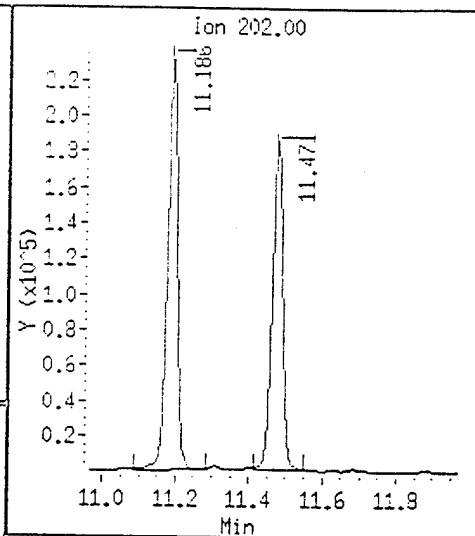
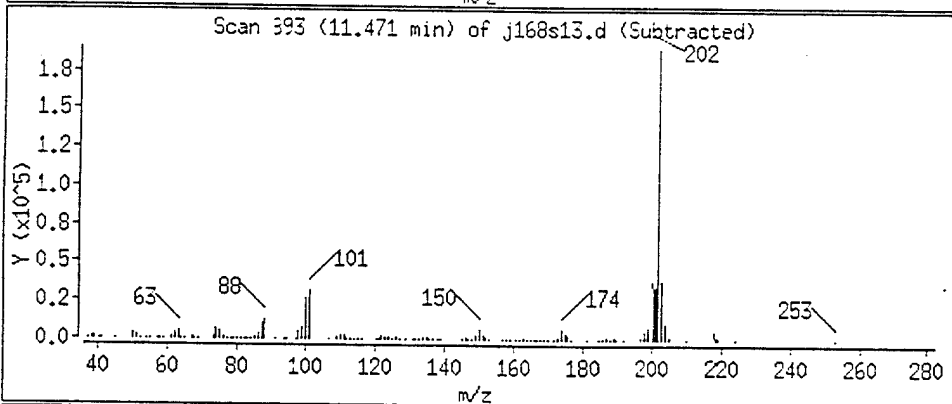
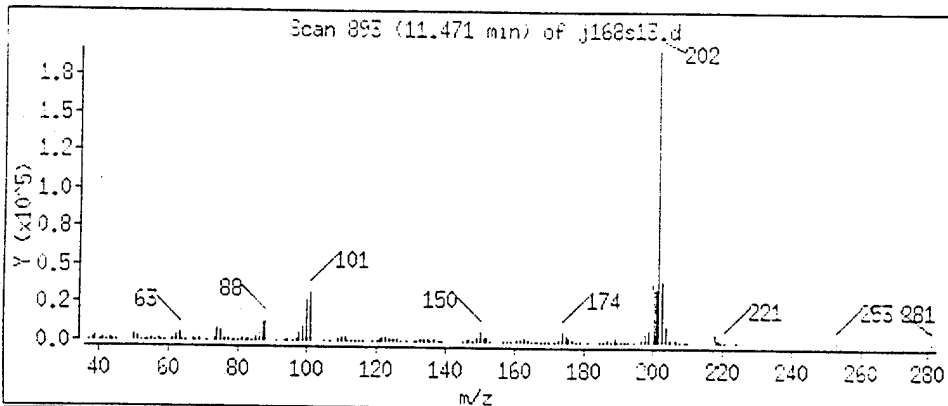
Sample ID :

Column phase : J&W DB-5

Column diameter : 0.25

Volume Injected (µl) : 2.0

71 Pyrene



Data File: /chem/j.1/j940617.b/j168s13.d

Page 7

Date : 17-JUN-1994 19:27

Instrument : J.1

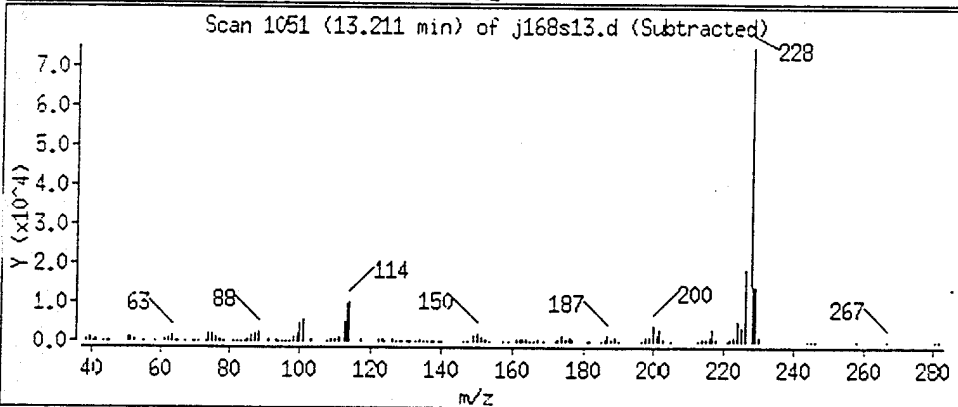
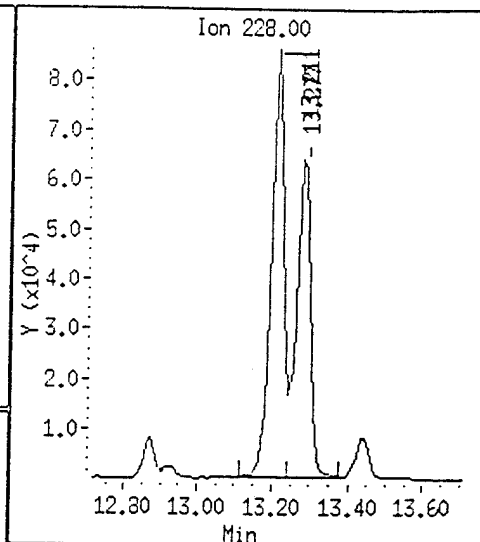
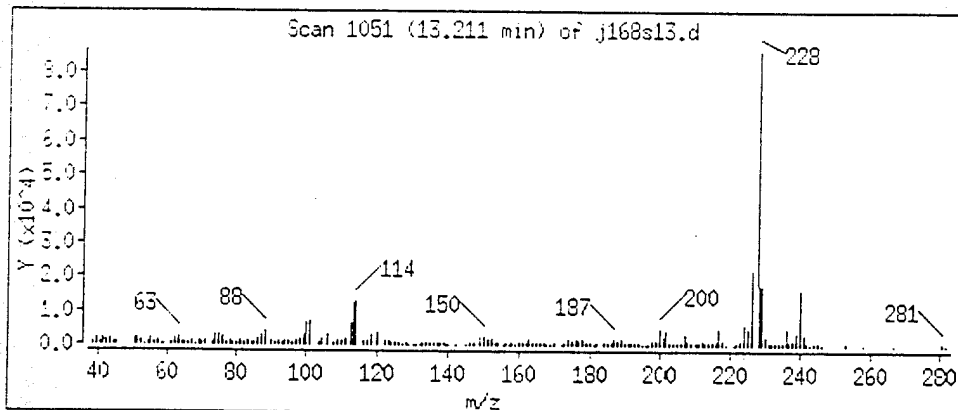
Sample ID :

Column phase : J&W DB-5

Column diameter : 0.25

Volume injected (uL) : 2.0

75 Benzo[*a*]anthracene



Data File: /chem/j.17/j940617.b/j168s13.d

Page 8

Date : 17-JUN-1994 19:27

Instrument : j.1

Sample ID :

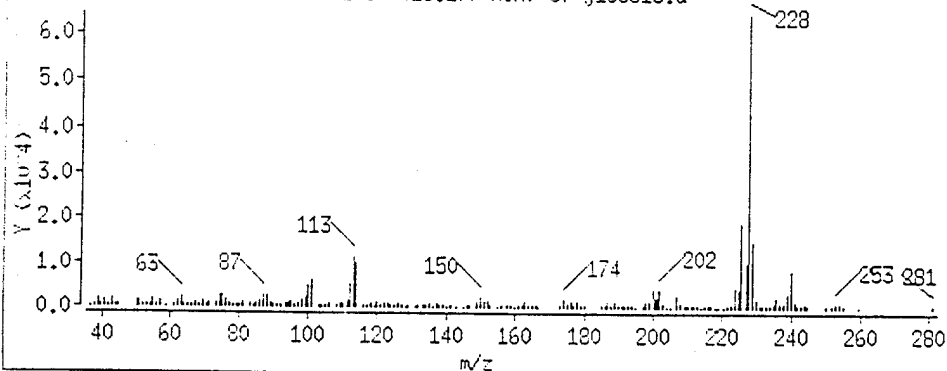
Column phase : J&W DB-5

Column diameter : 0.25

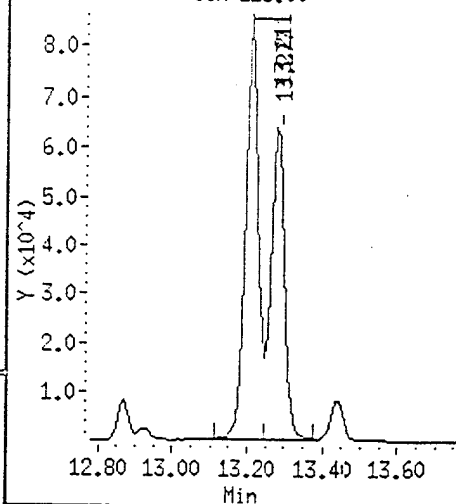
Volume Injected (uL) : 2.0

78 Chrysene

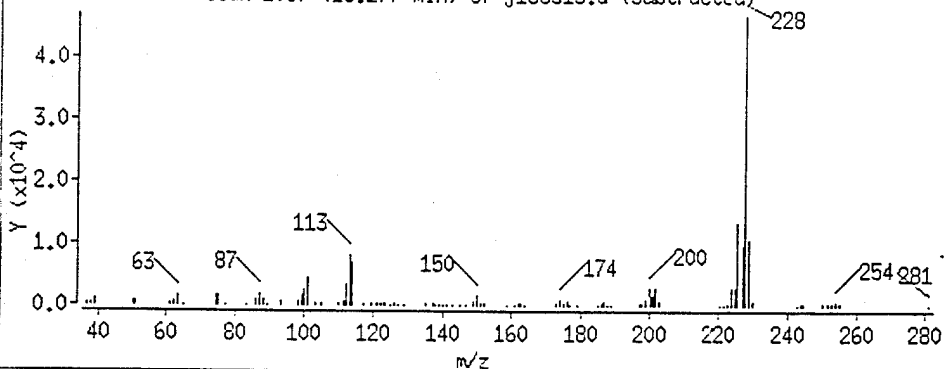
Scan 1057 (13.277 min) of j168s13.d



Ion 228.00



Scan 1057 (13.277 min) of j168s13.d (Subtracted)



Data File: /chem/j.1/j940617.b/j168s13.d

Page 9

Date : 17-JUN-1994 19:27

Instrument : j.1

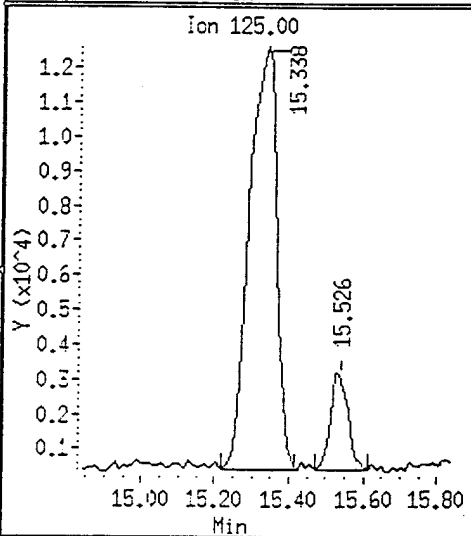
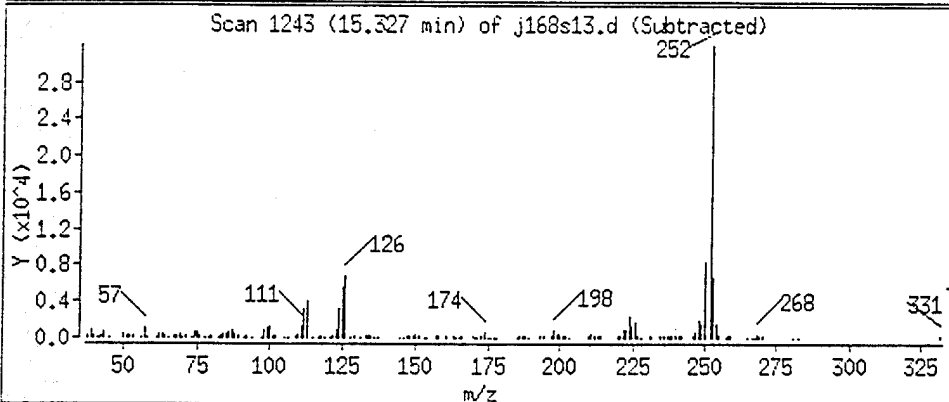
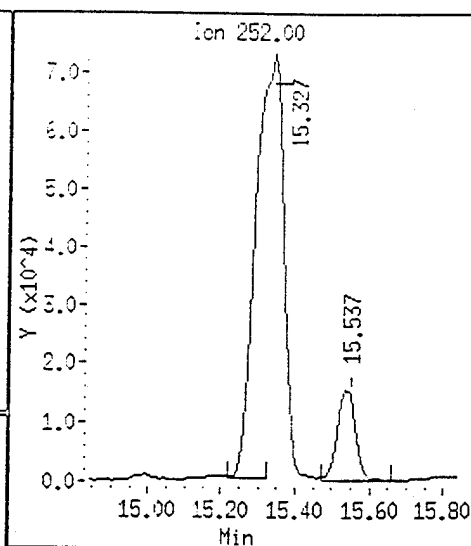
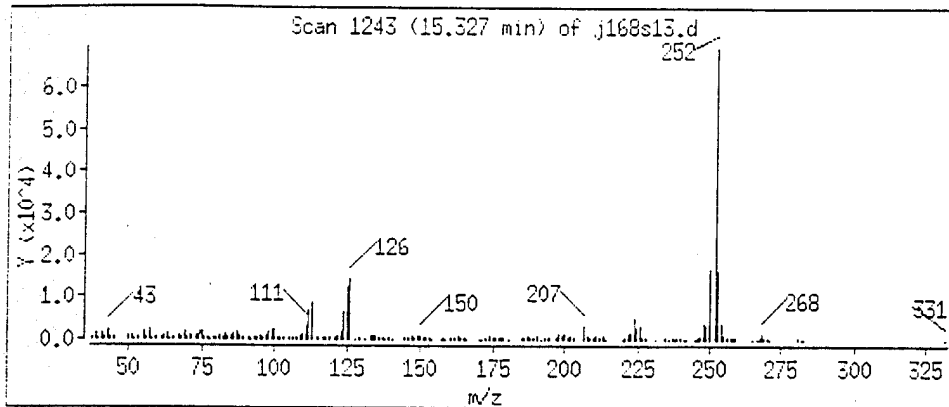
Sample ID :

Column phase : J&W DB-5

Column diameter : 0.25

Volume Injected (uL) : 2.0

80 Benzo[b]fluoranthene



Data File: /chem/j.1/j940617.b/j168s13.d

Page 10

Date: 17-JUN-1994 19:27

Instrument: j.i

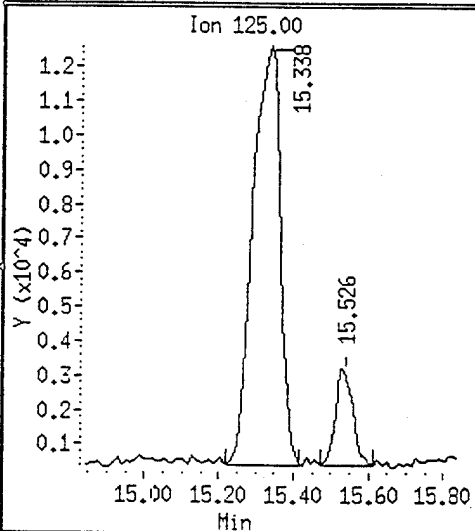
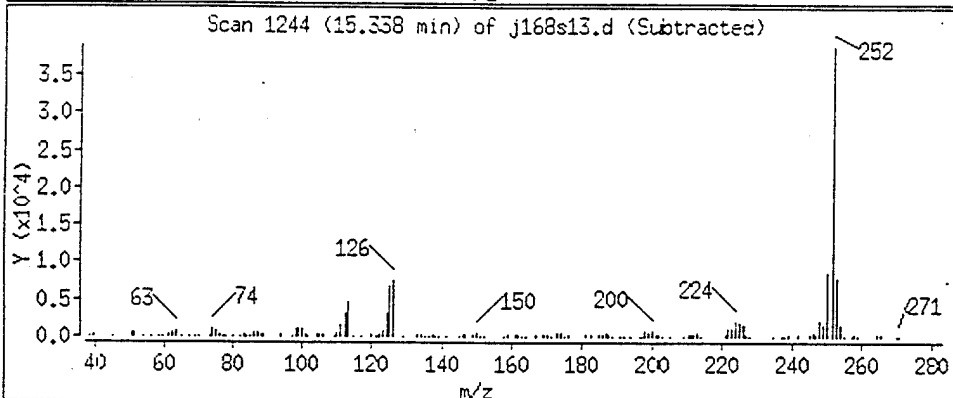
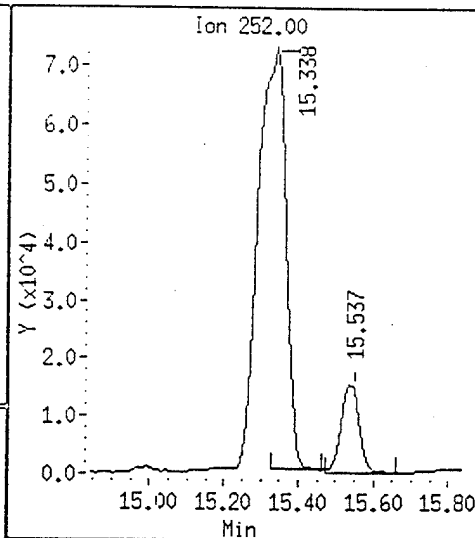
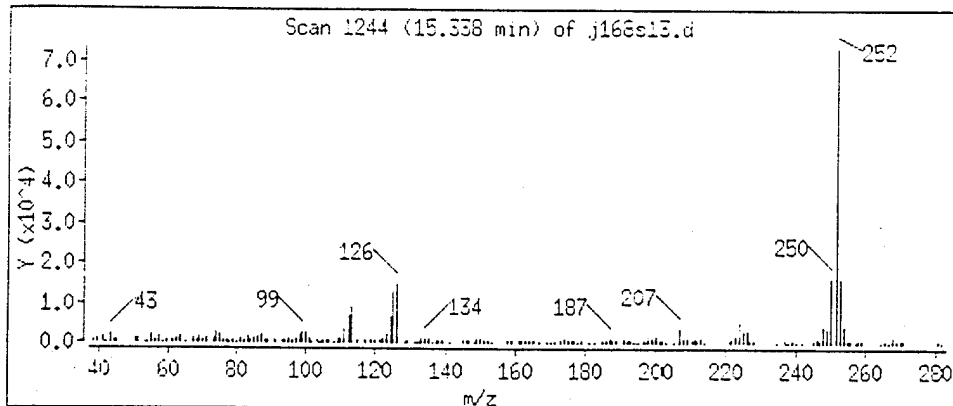
Sample ID:

Column phase: J&W DB-5

Column diameter: 0.25

Volume Injected (uL): 2.0

81 Benzo[k]fluoranthene



Date : 17-JUN-1994 19:27

Instrument : j.1

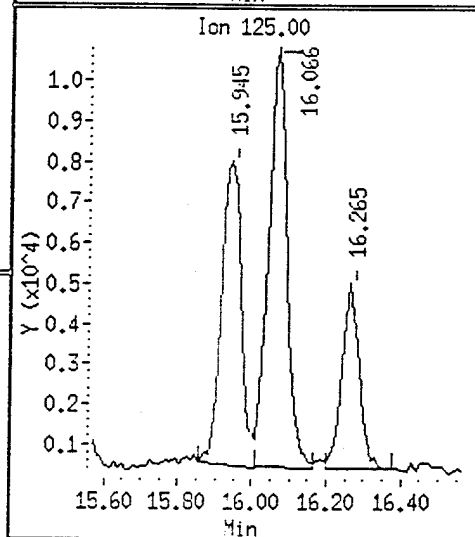
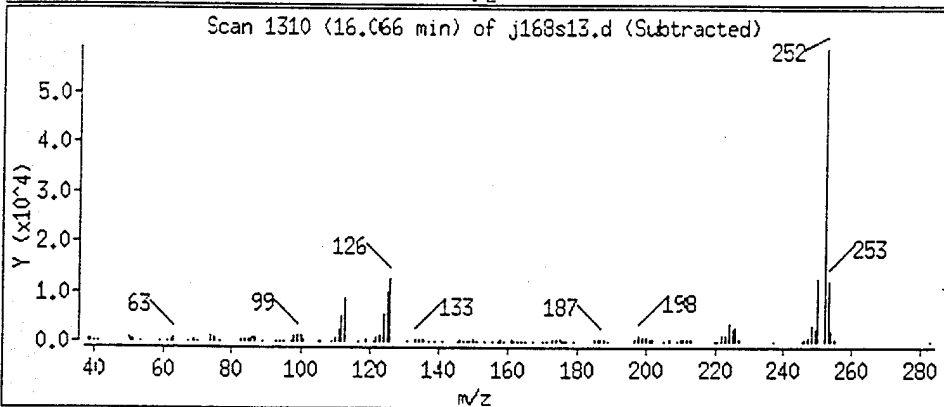
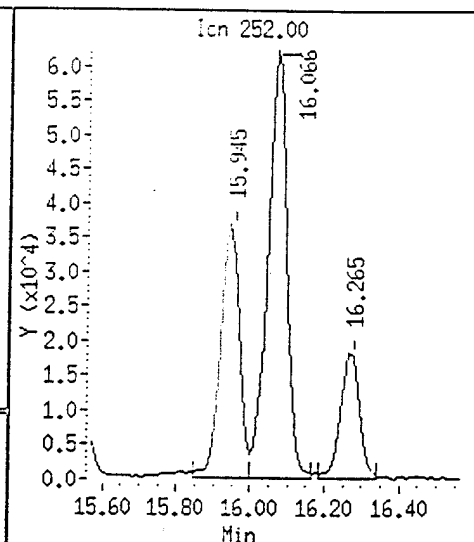
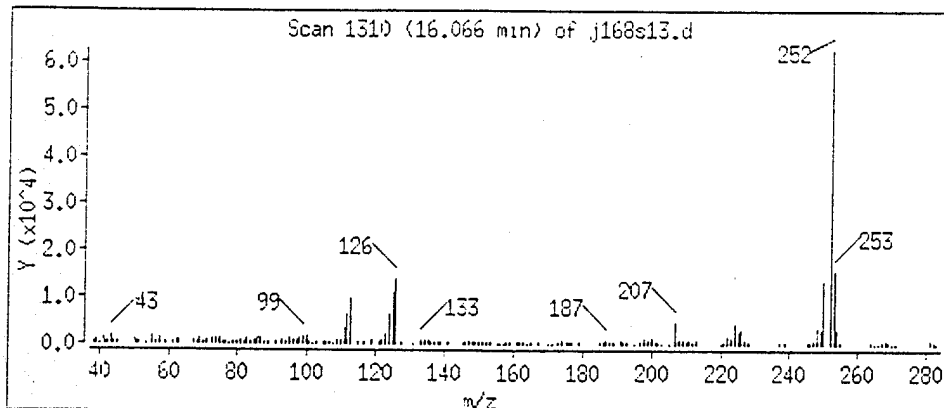
Sample ID :

Column phase : J&W DB-5

Column diameter : 0.25

Volume Injected (uL) : 2.0

82 Benzo[a]pyrene



Date : 17-JUN-1994 19:27

Instrument : j.1

Sample ID :

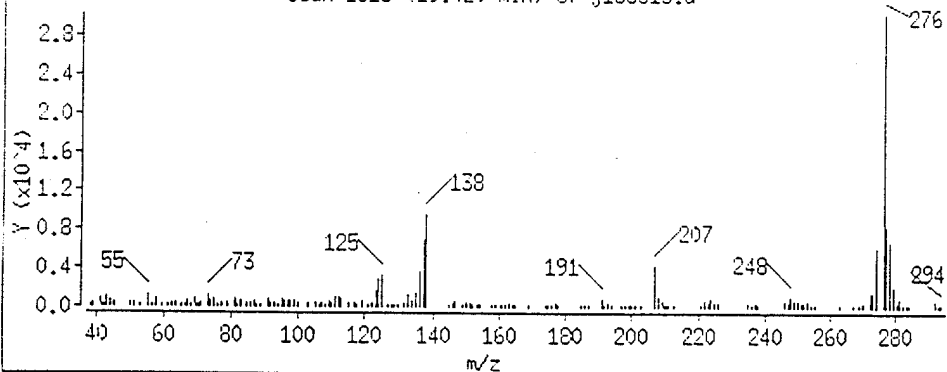
Column phase : J&W DB-5

Column diameter : 0.25

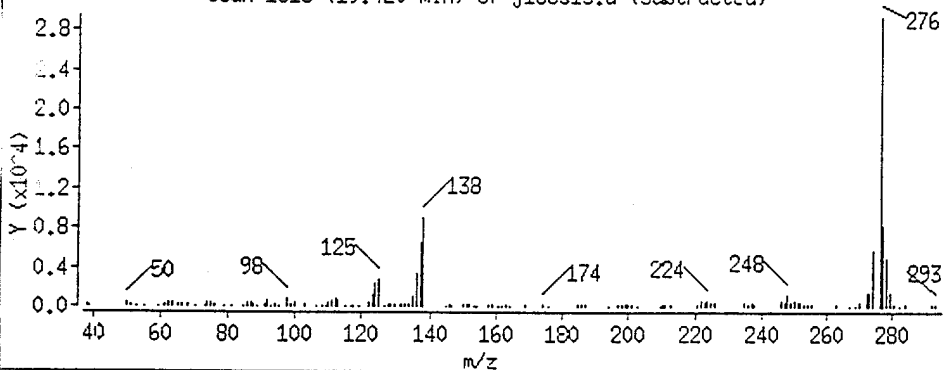
Volume injected (uL) : 2.0

84 Indeno[1,2,3-cd]pyrene

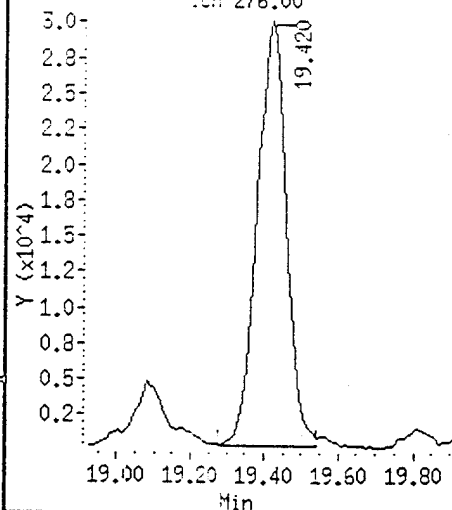
Scan 1615 (19.420 min) of j168s13.d



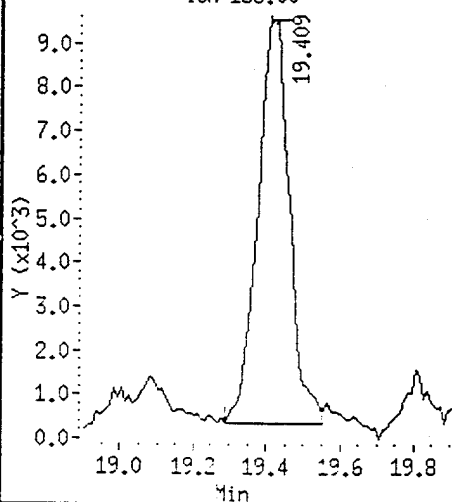
Scan 1615 (19.420 min) of j168s13.d (Subtracted)



Ion 276.00



Ion 138.00



Date : 17-JUN-1994 19:27

Instrument : J.1

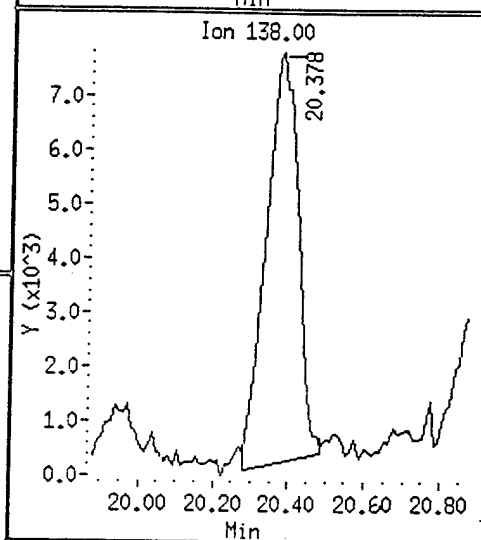
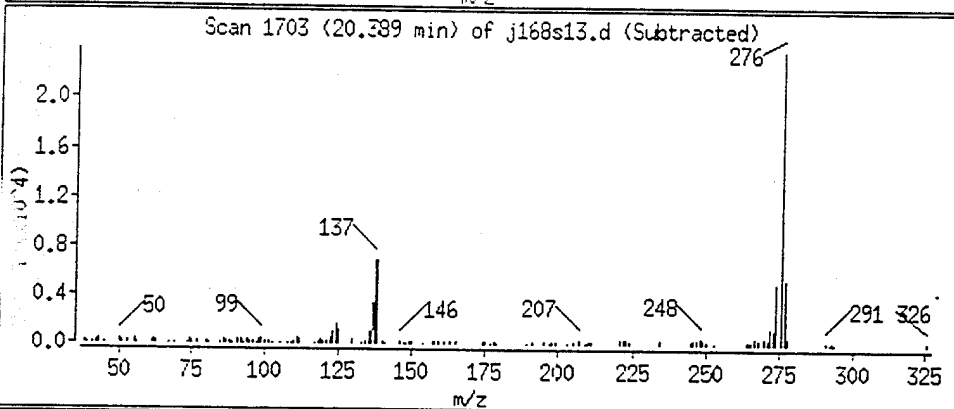
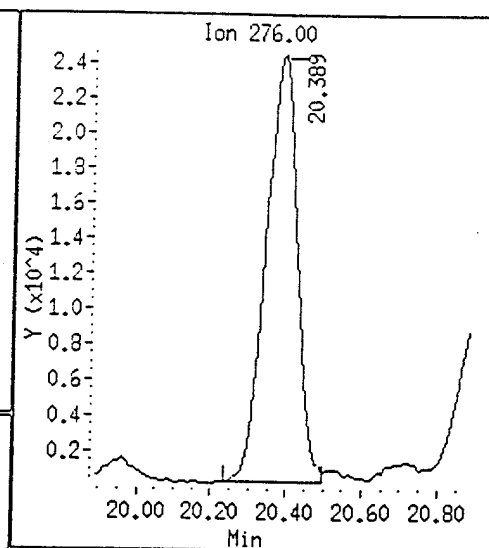
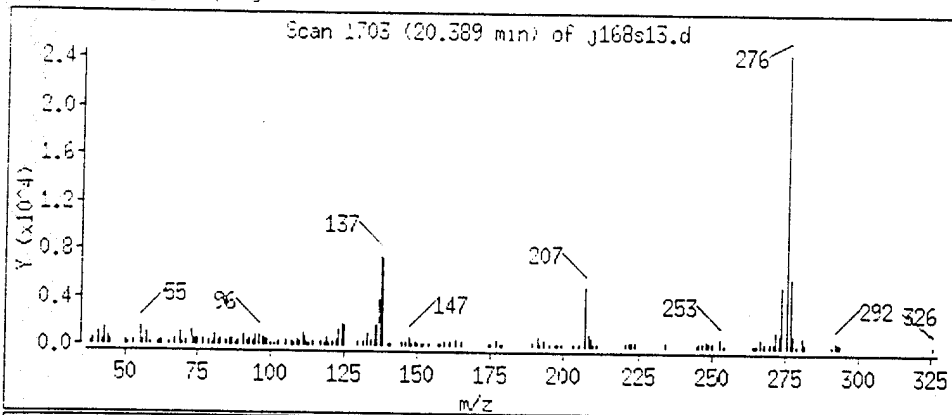
Sample ID :

Column phase : J&W DB-5

Column diameter : 0.25

Volume Injected (uL) : 2.0

36 Benzo[a,h]ilperylene



SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s13.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-05B 5X

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	121206	60603	242412	135233	11.57
32 Naphthalene-d8	445390	222695	890780	501243	12.54
48 Acenaphthene-d10	275750	137875	551500	306012	10.97
65 Phenanthrene-d10	336972	168486	673944	374400	11.11
76 Chrysene-d12	146532	73266	293064	226260	54.41
83 Perylene-d12	160474	80237	320948	288701	79.91

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER =====	UPPER =====		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.13
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.17
48 Acenaphthene-d10	8.12	7.62	8.62	8.11	-0.23
65 Phenanthrene-d10	9.79	9.29	10.29	9.77	-0.16
76 Chrysene-d12	13.26	12.76	13.76	13.24	-0.09
83 Perylene-d12	16.21	15.71	16.71	16.21	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168s13.d

Date : 17-JUN-1994 19:27

Instrument : j.i

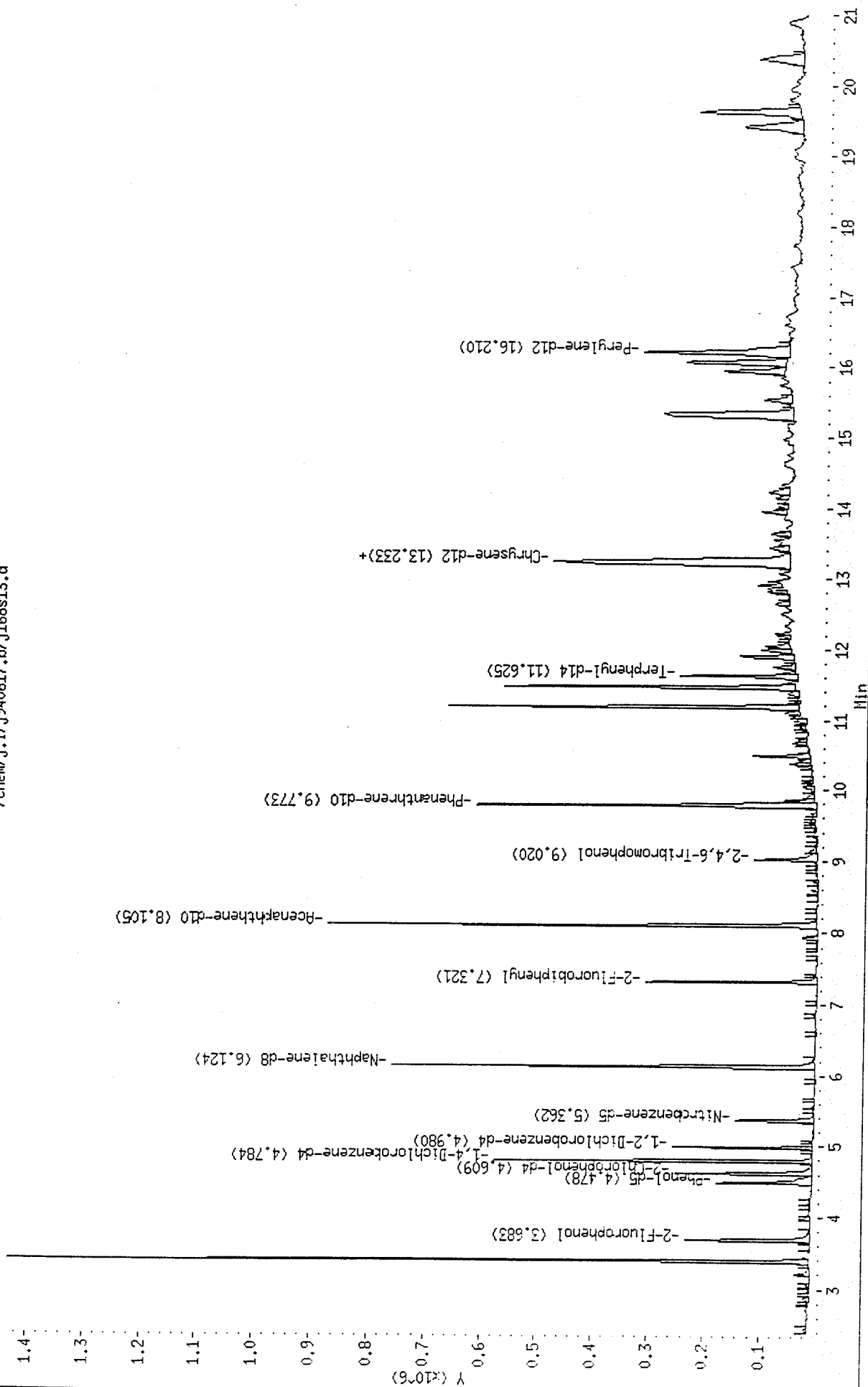
Sample ID :

Column phase : J&W DB-5

Volume Injected (ul) : 2.0

Column diameter : 0.25

/chem/j.i./j940617.b/j168s13.d





Certificate of Analysis No. 9406119-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 14:10:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
Benzo(g,h,i)Perylene	ND	330	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl)Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl)Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-08

Operational Tech

SAMPLE ID: A-07 BH Int.2

ANALYTICAL DATA (continued)			
PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 18:05:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-06

Operational Tech

SAMPLE ID: A-06 BH Int.2

ANALYTICAL DATA (continued)			
PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 19:00:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s12.d
Lab. Id. :
Inj Date : 17-JUN-94 19:00
Operator : LH
Smp Info : 9406119-06B
Misc Info : 9406119-06B
Comment :
Method : /chem/j.i/j940617.b/jclps.m
Meth Date : 17-Jun-1994 14:44 liping
Cal Date : 17-JUN-1994 09:39
Als bottle: 19
Dil Factor: 1.000
Integrator: HP RTE
Sample Matrix: SOIL

Quant Type: ISTD
Autotune Date: {
Inst ID: j.i

Cal File: j168cc1.d

Target Version: Target 3.00
Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	REL RT	RESPONSE	ON-COLUMN	FINAL
						(ng)	(ug/Kg)
=====	=====	==	=====	=====	=====	=====	
\$ 3 2-Fluorophenol	112.00	3.690	(0.772)	645315	100	1700	
\$ 5 Phenol-d5	99.00	4.475	(0.936)	791535	98	1600	
\$ 8 2-Chlorophenol-d4	132.00	4.617	(0.966)	704432	99	1600	
* 11 1,4-Dichlorobenzene-d4	152.00	4.781	(1.000)	168542	40		
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.978	(0.614)	321042	66	1100	
21 N-Nitroso-di-n-propylamine	70.00	5.360	(1.121)	81383	18	300 (aQ)	
\$ 23 Nitrobenzene-d5	82.00	5.360	(0.875)	533912	74	1200	
* 32 Naphthalene-d8	136.00	6.123	(1.000)	591088	40		
\$ 40 2-Fluorobiphenyl	172.00	7.332	(0.904)	904788	78	1300	
* 48 Acenaphthene-d10	164.00	8.106	(1.000)	362652	40		
54 Diethylphthalate	149.00	8.596	(1.060)	45899	3	54 (a)	
\$ 61 2,4,6-Tribromophenol	330.00	9.022	(0.923)	86308	53	890 (Q)	
* 65 Phenanthrene-d10	188.00	9.775	(1.000)	499161	40		
\$ 72 Terphenyl-d14	244.00	11.633	(0.878)	712194	71	1200	
* 76 Chrysene-d12	240.00	13.242	(1.000)	291675	40		
* 83 Perylene-d12	264.00	16.199	(1.000)	264157	40		

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s12.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-06B

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW.

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	121206	60603	242412	168542	39.05
32 Naphthalene-d8	445390	222695	890780	591088	32.71
48 Acenaphthene-d10	275750	137875	551500	362652	31.51
65 Phenanthrene-d10	336972	168486	673944	499161	48.13
76 Chrysene-d12	146532	73266	293064	291675	99.05
83 Perylene-d12	160474	80237	320948	264157	64.61

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.78	-0.41
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.19
48 Acenaphthene-d10	8.12	7.62	8.62	8.11	-0.22
65 Phenanthrene-d10	9.79	9.29	10.29	9.78	-0.14
76 Chrysene-d12	13.26	12.76	13.76	13.24	-0.10
83 Perylene-d12	16.21	15.71	16.71	16.20	-0.05

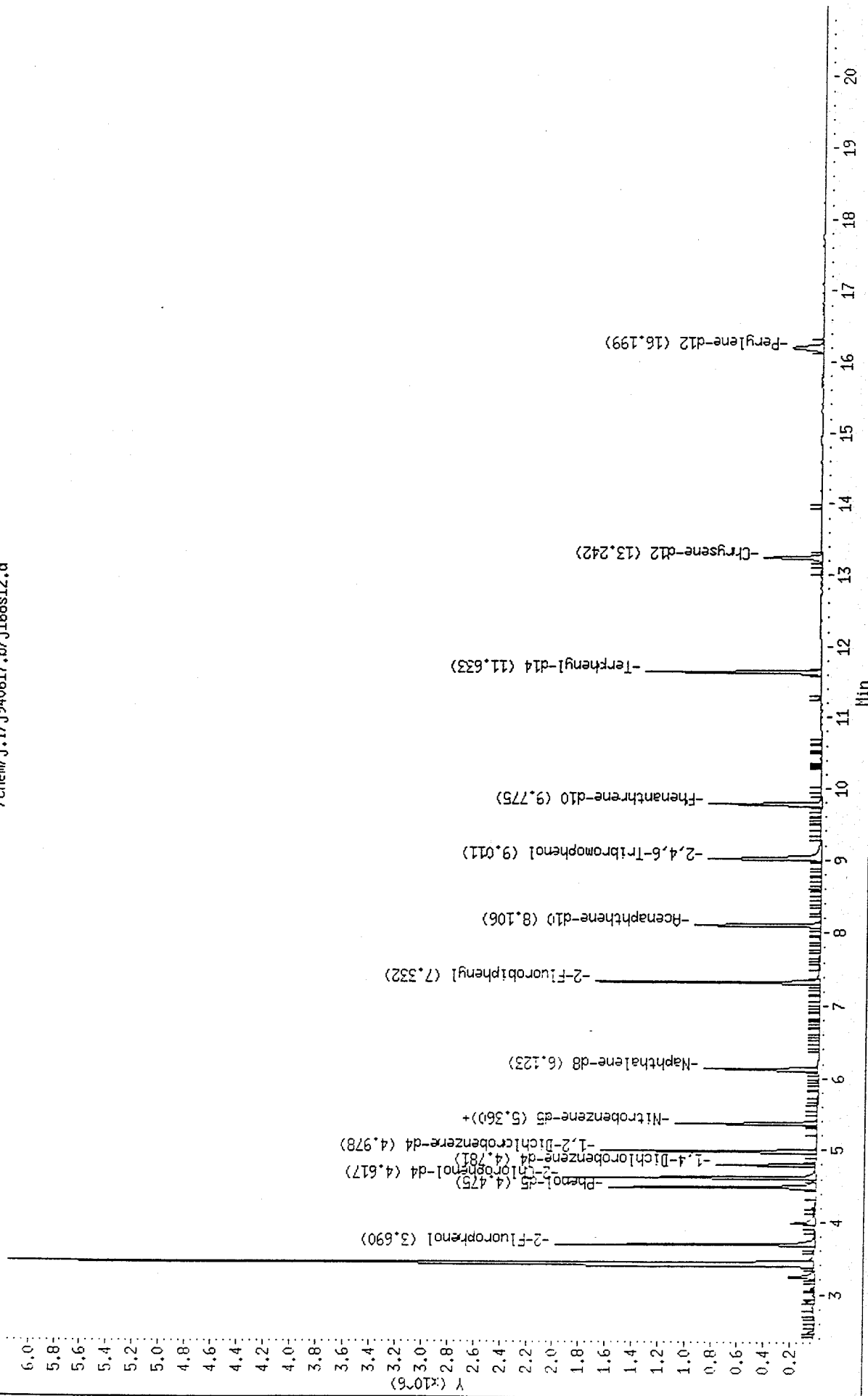
AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j940617.b/j168s12.d
 Date : 17-JUN-1994 19:00
 Instrument : j.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (uL) : 2.0

Page 1

Column diameter : 0.25

/chem/j.i/j940617.b/j168s12.d





Certificate of Analysis No. 9406119-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:00:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
Benzo(g,h,i)Perylene	ND	330	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl)Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl)Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)



Certificate of Analysis No. 9406119-07

Operational Tech

SAMPLE ID: A-07 BH Int.1

PARAMETER	ANALYTICAL DATA (continued)		UNITS
	RESULTS	PQL*	
1,2-Diphenylhydrazine	ND	330	µg/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
3-Nitroaniline	ND	800	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
Nitrobenzene	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Pyridine	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg

ANALYZED BY: LH

DATE/TIME: 06/17/94 18:32:00

EXTRACTED BY: LJ

DATE/TIME: 06/08/94

METHOD: 8270, Semivolatile Organics - Soil

NOTES: * - Practical Quantitation Limit

ND - Not Detected

NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s11.d

Lab. Id. :

Inj Date : 17-JUN-94 18:32

Operator : LH

Smp Info : 9406119-07B

Misc Info : 9406119-07B

Comment :

Method : /chem/j.i/j940617.b/jclps.m

Meth Date : 17-Jun-1994 14:44 liping

Cal Date : 17-JUN-1994 09:39

Als bottle: 18

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: SOIL

Quant Type: ISTD

Autotune Date: {

Inst ID: j.i

Cal File: j168cc1.d

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG		CONCENTRATIONS			
	MASS	RT	REL RT	RESPONSE	ON-COLUMN (ng)	FINAL (ug/Kg)
=====	=====	==	=====	=====	=====	=====
\$ 3 2-Fluorophenol	112.00	3.687	(0.770)	519761	110	1800
\$ 5 Phenol-d5	99.00	4.484	(0.936)	628606	99	1600
\$ 8 2-Chlorophenol-d4	132.00	4.615	(0.963)	563723	100	1700
* 11 1,4-Dichlorobenzene-d4	152.00	4.790	(1.000)	132160	40	
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.975	(0.614)	251687	62	1000
21 N-Nitroso-di-n-propylamine	70.00	5.368	(1.121)	64661	18	300(aQ)
\$ 23 Nitrobenzene-d5	82.00	5.368	(0.877)	420513	70	1200
* 32 Naphthalene-d8	136.00	6.121	(1.000)	488982	40	
\$ 40 2-Fluorobiphenyl	172.00	7.331	(0.904)	745484	77	1300
* 48 Acenaphthene-d10	164.00	8.106	(1.000)	301566	40	
\$ 61 2,4,6-Tribromophenol	330.00	9.022	(0.923)	84570	65	1100(Q)
* 65 Phenanthrene-d10	188.00	9.777	(1.000)	400045	40	
66 Phenanthrene	178.00	9.799	(1.002)	53477	4	64(a)
67 Anthracene	178.00	9.799	(1.002)	53477	4	66(a)
70 Fluoranthene	202.00	11.190	(1.145)	90374	8	130(a)
71 Pyrene	202.00	11.476	(0.967)	64511	5	77(a)
\$ 72 Terphenyl-d14	244.00	11.630	(0.879)	555091	65	1100
75 Benzo(a)anthracene	228.00	13.282	(1.003)	32081	3	53(a)
* 76 Chrysene-d12	240.00	13.238	(1.000)	249577	40	
78 Chrysene	228.00	13.282	(1.003)	32081	4	60(a)
80 Benzo(b)fluoranthene	252.00	15.310	(0.945)	59518	5	90(a)
81 Benzo(k)fluoranthene	252.00	15.310	(0.945)	59518	5	97(a)
82 Benzo(a)pyrene	252.00	16.049	(0.990)	10667	3	54(a)
* 83 Perylene-d12	264.00	16.203	(1.000)	304315	40	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/j.i/j940617.b/j168s11.d
Report Date: 17-Jun-1994 13:57

Page 2

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s11.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-07B

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

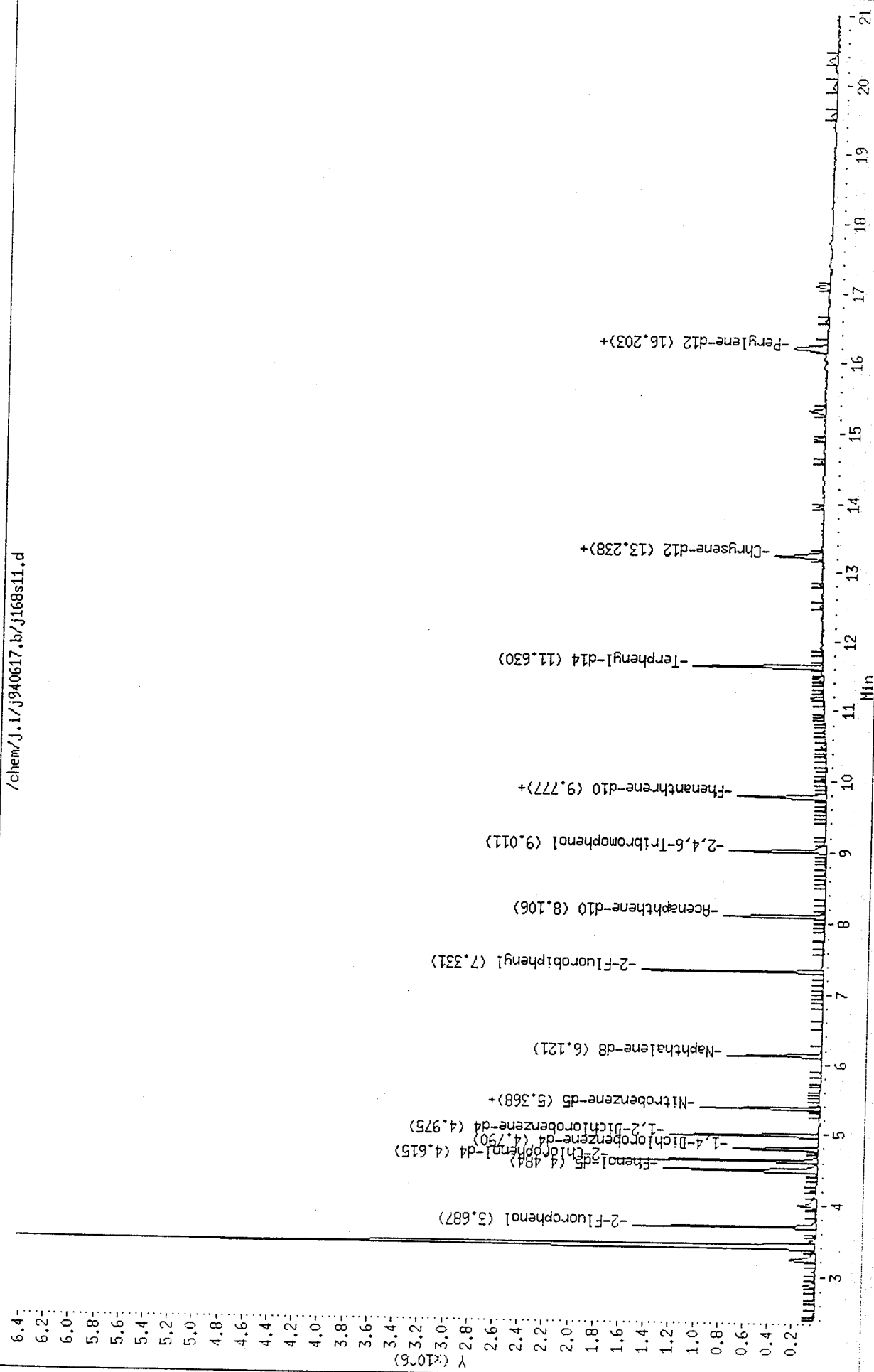
COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	121206	60603	242412	132160	9.04
32 Naphthalene-d8	445390	222695	890780	488982	9.79
48 Acenaphthene-d10	275750	137875	551500	301565	9.36
65 Phenanthrene-d10	336972	168486	673944	400045	18.72
76 Chrysene-d12	146532	73266	293064	249577	70.32
83 Perylene-d12	160474	80237	320948	304315	89.64

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.23
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.22
48 Acenaphthene-d10	8.12	7.62	8.62	8.11	-0.23
65 Phenanthrene-d10	9.79	9.29	10.29	9.78	-0.12
76 Chrysene-d12	13.26	12.76	13.76	13.24	-0.14
83 Perylene-d12	16.21	15.71	16.71	16.20	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168s11.d
 Date : 17-JUN-1994 18:32
 Instrument : j.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (ul) : 2.0

Column diameter : 0.25





Certificate of Analysis No. 9406119-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

06/21/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:07:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Benzo(a)Anthracene	ND	330	µg/Kg
Benzo(b)Fluoranthene	ND	330	µg/Kg
Benzo(k)Fluoranthene	ND	330	µg/Kg
Benzo(a)Pyrene	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
Benzo(g,h,i)Perylene	ND	330	µg/Kg
Benzyl alcohol	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
di-n-Butyl phthalate	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
bis(2-Chloroethoxy)Methane	ND	330	µg/Kg
bis(2-Chloroethyl) Ether	ND	330	µg/Kg
bis(2-Chloroisopropyl) Ether	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
Dibenz(a,h)Anthracene	ND	330	µg/Kg
Dibenzofuran	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168s10.d

Lab. Id. :

Inj Date : 17-JUN-94 18:05

Operator : LH

Smp Info : 9406119-08B

Misc Info : 9406119-08B

Comment :

Method : /chem/j.i/j940617.b/jclps.m

Meth Date : 17-Jun-1994 14:44 liping

Cal Date : 17-JUN-1994 09:39

Als bottle: 17

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: SOIL

Quant Type: ISTD

Autotune Date: {

Inst ID: j.i

Cal File: j168cc1.d

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/Kg)
=====	=====	=====	=====	=====	=====	=====
\$ 3 2-Fluorophenol	112.00	3.690 (0.770)	622928	100	1700	
\$ 5 Phenol-d5	99.00	4.475 (0.934)	750532	98	1600	
\$ 8 2-Chlorophenol-d4	132.00	4.617 (0.964)	658175	97	1500	
* 11 1,4-Dichlorobenzene-d4	152.00	4.792 (1.000)	160592	40		
* 13 1,2-Dichlorobenzene-d4	152.00	4.978 (0.614)	306875	64	1100	
21 N-Nitroso-di-n-propylamine	70.00	5.360 (1.118)	78363	18	300 (aq)	
\$ 23 Nitrobenzene-d5	82.00	5.360 (0.875)	508696	70	1200	
* 32 Naphthalene-d8	136.00	6.123 (1.000)	593370	40		
\$ 40 2-Fluorobiphenyl	172.00	7.332 (0.905)	858825	75	1200	
* 48 Acenaphthene-d10	164.00	8.106 (1.000)	357479	40		
\$ 61 2,4,6-Tribromophenol	330.00	9.021 (0.923)	142586	88	1500	
* 65 Phenanthrene-d10	188.00	9.774 (1.000)	497955	40		
\$ 72 Terphenyl-d14	244.00	11.640 (0.879)	718970	76	1300	
* 76 Chrysene-d12	240.00	13.235 (1.000)	276912	40		
* 83 Perylene-d12	264.00	15.200 (1.000)	258354	40		

QC Flag Legend

- a - Target compound detected but, quantitated amount
Below Limit Of Quantitation (BLOQ).
- Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168s10.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 9406119-08B

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	121206	60603	242412	160592	32.50
32 Naphthalene-d8	445390	222695	890780	593370	33.22
48 Acenaphthene-d10	275750	137875	551500	357479	29.64
65 Phenanthrene-d10	336972	168486	673944	497955	47.77
76 Chrysene-d12	146532	73266	293064	276912	88.98
83 Perylene-d12	160474	80237	320948	258354	60.99

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.79	-0.18
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.19
48 Acenaphthene-d10	8.12	7.62	8.62	8.11	-0.23
65 Phenanthrene-d10	9.79	9.29	10.29	9.77	-0.15
76 Chrysene-d12	13.26	12.76	13.76	13.24	-0.16
83 Perylene-d12	16.21	15.71	16.71	16.20	-0.05

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: SPLHOUSTON Contract: _____

Lab Code: SPL Case No.: 406119 SAS No.: _____ SDG No.: 406119

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	A-01_BH_INT	74	84	64	67	72	10 *	67	72	1
02	A-01_BH_INT	66	73	71	63	67	55	65	63	0
03	A-02_BH_INT	71	80	74	67	73	41	67	68	0
04	A-02_BH_INT	83	77	67	67	73	51	67	62	0
05	A-03_BH_INT	68	74	69	63	67	51	65	64	0
06	A-03_BH_INT	68	74	72	64	67	67	63	64	0
07	A-04_BH_INT	80	105	60	77	77	40	77	95	0
08	A-04_BH_INT	73	81	80	73	67	80	67	77	0
09	A-05_BH_INT	76	90	60	69	71	32	71	74	0
10	A-05_BH_INT	73	83	79	73	73	25	73	77	0
11	A-06_BH_INT	65	80	65	63	57	23	60	55	0
12	A-06_BH_INT	74	78	71	65	67	35	66	66	0
13	A-07_BH_INT	70	67	65	66	73	43	67	62	0
14	A-07_BH_INT	70	75	76	65	67	59	65	64	0
15	SBLK01	80	84	83	73	80	87	73	79	0
16	SBLK02	69	84	84	67	73	73	67	68	0

QC LIMITS

S1 (NBZ) = Nitrobenzene-d5 (23-120)
 S2 (FBP) = 2-Fluorobiphenyl (30-115)
 S3 (TPH) = Terphenyl-d14 (18-137)
 S4 (PHL) = Phenol-d5 (24-113)
 S5 (2FP) = 2-Fluorophenol (25-121)
 S6 (TBP) = 2,4,6-Tribromophenol (19-122)
 S7 (2CP) = 2-Chlorophenol-d4 (20-130) (advisory)
 S8 (DCB) = 1,2-Dichlorobenzene-d4 (20-130) (advisory)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPLHOUSTON Contract: _____Lab Code: SPL Case No.: 406119 SAS No.: _____ SDG No.: 406592Matrix Spike - EPA Sample No.: A-03_BH_INT_2 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	2500	0	1399	56	26- 90
2-Chlorophenol	2500	0	1532	61	25-102
1,4-Dichlorobenzene	1660	0	982.4	59	28-104
N-Nitroso-di-n-prop. (1)	1660	0	1116	67	41-126
1,2,4-Trichlorobenzene	1660	0	1149	69	38-107
4-Chloro-3-methylphenol	2500	0	1832	73	26-103
Acenaphthene	1660	0	1132	68	31-137
4-Nitrophenol	2500	0	1832	73	11-114
2,4-Dinitrotoluene	1660	0	1332	80	28- 89
Pentachlorophenol	2500	0	1399	56	17-109
Pyrene	1660	0	1066	64	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Phenol	2500	1498	60	7	35 26- 90
2-Chlorophenol	2500	1665	67	9	50 25-102
1,4-Dichlorobenzene	1660	1049	63	7	27 28-104
N-Nitroso-di-n-prop. (1)	1660	1199	72	7	38 41-126
1,2,4-Trichlorobenzene	1660	1232	74	7	23 38-107
4-Chloro-3-methylphenol	2500	1998	80	9	33 26-103
Acenaphthene	1660	1232	74	8	19 31-137
4-Nitrophenol	2500	1998	80	9	50 11-114
2,4-Dinitrotoluene	1660	1432	86	7	47 28- 89
Pentachlorophenol	2500	1515	61	9	47 17-109
Pyrene	1660	1082	65	2	36 35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limitsSpike Recovery: 0 out of 22 outside limitsCOMMENTS: ,406119,,A-03 BH INT.2,L,S,9406119-10B,B,E,C,J
CAP,J168CC1,J168DF1,,,,,J

3D
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPLHOUSTON Contract: _____

Lab Code: SPL Case No.: 405986 SAS No.: _____ SDG No.: 406119

Matrix Spike - EPA Sample No.: SOUTH_B Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	2500	0	1958	78	26- 90
2-Chlorophenol	2500	0	1851	74	25-102
1,4-Dichlorobenzene	1660	0	1352	81	28-104
N-Nitroso-di-n-prop. (1)	1660	300.4	1455	70	41-126
1,2,4-Trichlorobenzene	1660	0	1528	92	38-107
4-Chloro-3-methylphenol	2500	0	2241	90	26-103
Acenaphthene	1660	0	1412	85	31-137
4-Nitrophenol	2500	0	2797	112	11-114
2,4-Dinitrotoluene	1660	0	1595	96 *	28- 89
Pentachlorophenol	2500	0	1878	75	17-109
Pyrene	1660	0	1415	85	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Phenol	2500	2045	82	5	35	26- 90
2-Chlorophenol	2500	1928	77	4	50	25-102
1,4-Dichlorobenzene	1660	1372	83	2	27	28-104
N-Nitroso-di-n-prop. (1)	1660	1475	71	1	38	41-126
1,2,4-Trichlorobenzene	1660	1552	93	1	23	38-107
4-Chloro-3-methylphenol	2500	2378	95	5	33	26-103
Acenaphthene	1660	1439	87	2	19	31-137
4-Nitrophenol	2500	2807	112	0	50	11-114
2,4-Dinitrotoluene	1660	1698	102 *	6	47	28- 89
Pentachlorophenol	2500	2075	83	10	47	17-109
Pyrene	1660	1472	89	5	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 2 out of 22 outside limits

COMMENTS: 8270,405986,,SOUTH B,L,S,9405986-05B,B,E,30-1,05/25 DE-2UL
CAP,0531S2D1,0531DFD2,,,,,40/4--300@10,INST D1

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK01

Lab Name: SPLHOUSTON Contract: _____

Lab Code: SPL Case No.: 406119 SAS No.: _____ SDG No.: 406119

Lab File ID: J160SBK1 Lab Sample ID: 940608SNB1

Instrument ID: J Date Extracted: 06/08/94

Matrix: (soil/water) SOIL Date Analyzed: 06/09/94

Level: (low/med) LOW Time Analyzed: 1704

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	A-01_BH_INT	9406119-11B	J168S08	06/17/94
02	A-01_BH_INT	9406119-12B	J168S07	06/17/94
03	A-02_BH_INT	9406119-14B	J168S05	06/17/94
04	A-02_BH_INT	9406119-13B	J168S06	06/17/94
05	A-03_BH_INT	9406119-09B	J168S09	06/17/94
06	A-03_BH_INT	9406119-10B	J168S02	06/17/94
07	A-04_BH_INT	9406119-02B	J164S05	06/13/94
08	A-05_BH_INT	9406119-04B	J164S06	06/13/94
09	A-06_BH_INT	9406119-05B	J168S13	06/17/94
10	A-06_BH_INT	9406119-06B	J168S12	06/17/94
11	A-07_BH_INT	9406119-07B	J168S11	06/17/94
12	A-07_BH_INT	9406119-08B	J168S10	06/17/94

COMMENTS: ,BLANK,,SBLK01,L,S,940608SNB1,B,B,C,J
CAP,J160CC2,J160DF2,,,,,J



SPL Blank QC Report

page 1

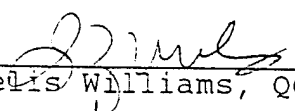
Matrix: Soil
Sample ID: 940608SNB1
Batch: EX940525000001

Reported on: 06/20/94 16:10
Analyzed on: 06/09/94 17:04
Analyst: LH

Compound	Result	Detection Limit	Units
Pyridine	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
bis(2-Chloroethyl) Ether	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
Benzyl Alcohol	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
bis(2-Chloroisopropyl) Ethe	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Nitrobenzene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Benzoic Acid	ND	1600	µg/Kg
bis(2-Chloroethoxy) Methane	ND	330	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	800	µg/Kg
2-Chloronaphthalene	ND	330	µg/Kg
2-Nitroaniline	ND	800	µg/Kg
Dimethyl Phthalate	ND	330	µg/Kg
Acenaphthylene	ND	330	µg/Kg

Notes

ND - Not detected.


Idevis Williams, QC Officer



SPL Blank QC Report

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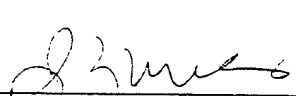
Matrix: Soil
Sample ID: 940608SNB1
Batch: EX940525000001

Reported on: 06/20/94 16:10
Analyzed on: 06/09/94 17:04
Analyst: LH

C o m p o u n d	Result	Detection Limit	Units
3-Nitroaniline	ND	800	µg/Kg
Acenaphthene	ND	330	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
Dibenzofuran	ND	330	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
1,2-Diphenylhydrazine	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
Di-n-Butylphthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
Benzo(a)anthracene	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Benzo(b)fluoranthene	ND	330	µg/Kg
Benzo(k)fluoranthene	ND	330	µg/Kg
Benzo(a)pyrene	ND	330	µg/Kg
Indeno(1,2,3-cd)pyrene	ND	330	µg/Kg
Dibenz(a,h)anthracene	ND	330	µg/Kg

Notes

ND - Not detected.


Idelis Williams, QC Officer



SPL Blank QC Report

page 3

Matrix: Soil
Sample ID: 940608SNB1
Batch: EX940525000001

Reported on: 06/20/94 16:10
Analyzed on: 06/09/94 17:04
Analyst: LH

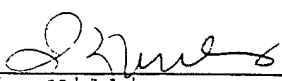
C o m p o u n d	Result	Detection Limit	Units
Benzo(g,h,i)perylene	ND	330	µg/Kg

S u r r o g a t e	Result	QC Criteria	Units
Nitrobenzene-d5	80	23-120	% Recovery
2-Fluorobiphenyl	84	30-115	% Recovery
Terphenyl-d14	83	18-137	% Recovery
Phenol-d5	73	24-113	% Recovery
2-Fluorophenol	80	25-121	% Recovery
2,4,6-Tribromophenol	87	19-122	% Recovery

Samples in Batch 9406119-02 9406119-04

Notes

ND - Not detected.


Idelis Williams, QC Officer

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK02

Lab Name: SPLHOUSTON Contract: _____

Lab Code: SPL Case No.: 406119 SAS No.: _____ SDG No.: 406119

Lab File ID: J168SBK1 Lab Sample ID: 940615SNB1

Instrument ID: J Date Extracted: 06/15/94

Matrix: (soil/water) SOIL Date Analyzed: 06/17/94

Level: (low/med) LOW Time Analyzed: 1252

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	=====	=====	=====	=====
01	A-04_BH_INT	9406119-01B	J168S15	06/17/94
02	A-05_BH_INT	9406119-03B	J168S14	06/17/94

COMMENTS: ,BLANK,,SBLK02,L,S,940615SNB1,B,B,C,J
CAP,J168CC1,J168DF1,,,,,J



SPL Blank QC Report

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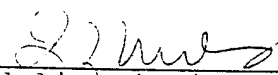
Matrix: Soil
Sample ID: 940615SNB1
Batch: EX940608000001

Reported on: 06/20/94 16:10
Analyzed on: 06/17/94 12:52
Analyst: LH

C o m p o u n d	Result	Detection Limit	Units
Pyridine	ND	330	µg/Kg
Phenol	ND	330	µg/Kg
Aniline	ND	330	µg/Kg
bis(2-Chloroethyl) Ether	ND	330	µg/Kg
2-Chlorophenol	ND	330	µg/Kg
1,3-Dichlorobenzene	ND	330	µg/Kg
1,4-Dichlorobenzene	ND	330	µg/Kg
Benzyl Alcohol	ND	330	µg/Kg
1,2-Dichlorobenzene	ND	330	µg/Kg
2-Methylphenol	ND	330	µg/Kg
bis(2-Chloroisopropyl) EtHe	ND	330	µg/Kg
4-Methylphenol	ND	330	µg/Kg
N-Nitroso-Di-n-Propylamine	ND	330	µg/Kg
Hexachloroethane	ND	330	µg/Kg
Nitrobenzene	ND	330	µg/Kg
Isophorone	ND	330	µg/Kg
2-Nitrophenol	ND	330	µg/Kg
2,4-Dimethylphenol	ND	330	µg/Kg
Benzoic Acid	ND	330	µg/Kg
bis(2-Chloroethoxy) Methane	ND	1600	µg/Kg
2,4-Dichlorophenol	ND	330	µg/Kg
1,2,4-Trichlorobenzene	ND	330	µg/Kg
Naphthalene	ND	330	µg/Kg
4-Chloroaniline	ND	330	µg/Kg
Hexachlorobutadiene	ND	330	µg/Kg
4-Chloro-3-Methylphenol	ND	330	µg/Kg
2-Methylnaphthalene	ND	330	µg/Kg
Hexachlorocyclopentadiene	ND	330	µg/Kg
2,4,6-Trichlorophenol	ND	330	µg/Kg
2,4,5-Trichlorophenol	ND	330	µg/Kg
2-Chloronaphthalene	ND	800	µg/Kg
2-Nitroaniline	ND	330	µg/Kg
Dimethyl Phthalate	ND	800	µg/Kg
Acenaphthylene	ND	330	µg/Kg

Notes

ND - Not detected.


Idelis Williams, QC Officer



SPL Blank QC Report

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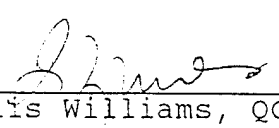
Matrix: Soil
Sample ID: 940615SNB1
Batch: EX940608000001

Reported on: 06/20/94 16:10
Analyzed on: 06/17/94 12:52
Analyst: LH

C o m p o u n d	Result	Detection Limit	Units
3-Nitroaniline	ND	800	µg/Kg
Acenaphthene	ND	330	µg/Kg
2,4-Dinitrophenol	ND	800	µg/Kg
4-Nitrophenol	ND	800	µg/Kg
Dibenzofuran	ND	330	µg/Kg
2,4-Dinitrotoluene	ND	330	µg/Kg
2,6-Dinitrotoluene	ND	330	µg/Kg
Diethylphthalate	ND	330	µg/Kg
4-Chlorophenylphenyl ether	ND	330	µg/Kg
Fluorene	ND	330	µg/Kg
4-Nitroaniline	ND	800	µg/Kg
4,6-Dinitro-2-Methylphenol	ND	800	µg/Kg
N-Nitrosodiphenylamine (1)	ND	330	µg/Kg
1,2-Diphenylhydrazine	ND	330	µg/Kg
4-Bromophenylphenyl ether	ND	330	µg/Kg
Hexachlorobenzene	ND	330	µg/Kg
Pentachlorophenol	ND	800	µg/Kg
Phenanthrene	ND	330	µg/Kg
Anthracene	ND	330	µg/Kg
Carbazole	ND	330	µg/Kg
Di-n-Butylphthalate	ND	330	µg/Kg
Fluoranthene	ND	330	µg/Kg
Pyrene	ND	330	µg/Kg
Butylbenzylphthalate	ND	330	µg/Kg
3,3'-Dichlorobenzidine	ND	330	µg/Kg
Benzo(a)anthracene	ND	330	µg/Kg
Chrysene	ND	330	µg/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	µg/Kg
Di-n-Octyl Phthalate	ND	330	µg/Kg
Benzo(b)fluoranthene	ND	330	µg/Kg
Benzo(k)fluoranthene	ND	330	µg/Kg
Benzo(a)pyrene	ND	330	µg/Kg
Indeno(1,2,3-cd)pyrene	ND	330	µg/Kg
Dibenz(a,h)anthracene	ND	330	µg/Kg

Notes

ND - Not detected.


Idelis Williams, QC Officer



SPL Blank QC Report

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Matrix: Soil
Sample ID: 940615SNB1
Batch: EX940608000001

Reported on: 06/20/94 16:10
Analyzed on: 06/17/94 12:52
Analyst: LH

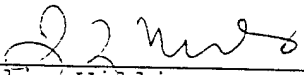
C o m p o u n d	Result	Detection Limit	Units
Benzo(g,h,i)perylene	ND	330	µg/Kg

S u r r o g a t e	Result	QC Criteria	Units
Nitrobenzene-d5	69	23-120	% Recovery
2-Fluorobiphenyl	84	30-115	% Recovery
Terphenyl-d14	84	18-137	% Recovery
Phenol-d5	67	24-113	% Recovery
2-Fluorophenol	73	25-121	% Recovery
2,4,6-Tribromophenol	73	19-122	% Recovery

Samples in Batch 9406119-01 9406119-03 9406119-05 9406119-06
9406119-07 9406119-08 9406119-09 9406119-10
9406119-11 9406119-12 9406119-13 9406119-14

Notes

ND - Not detected.

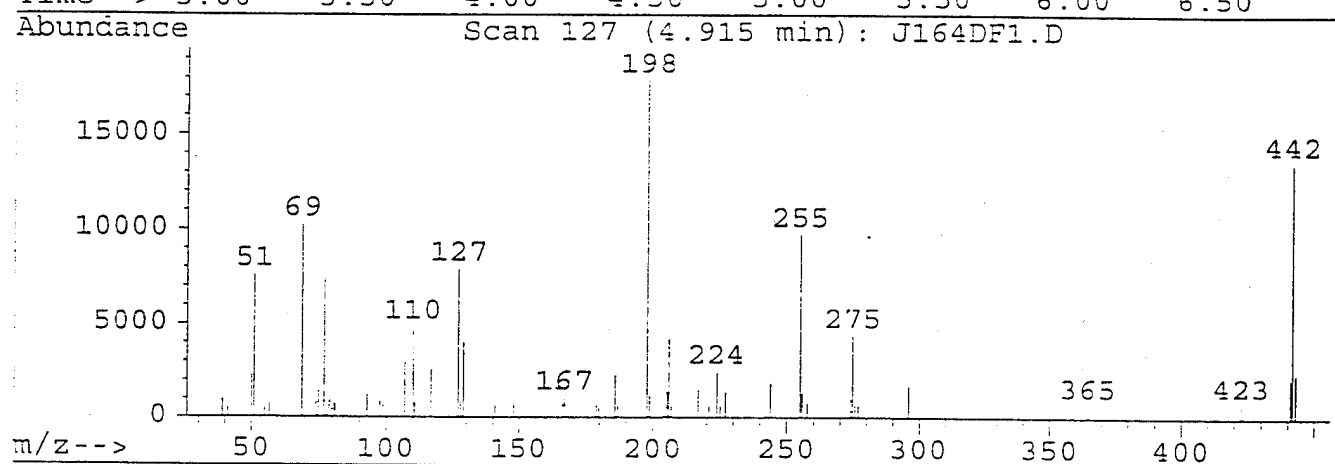
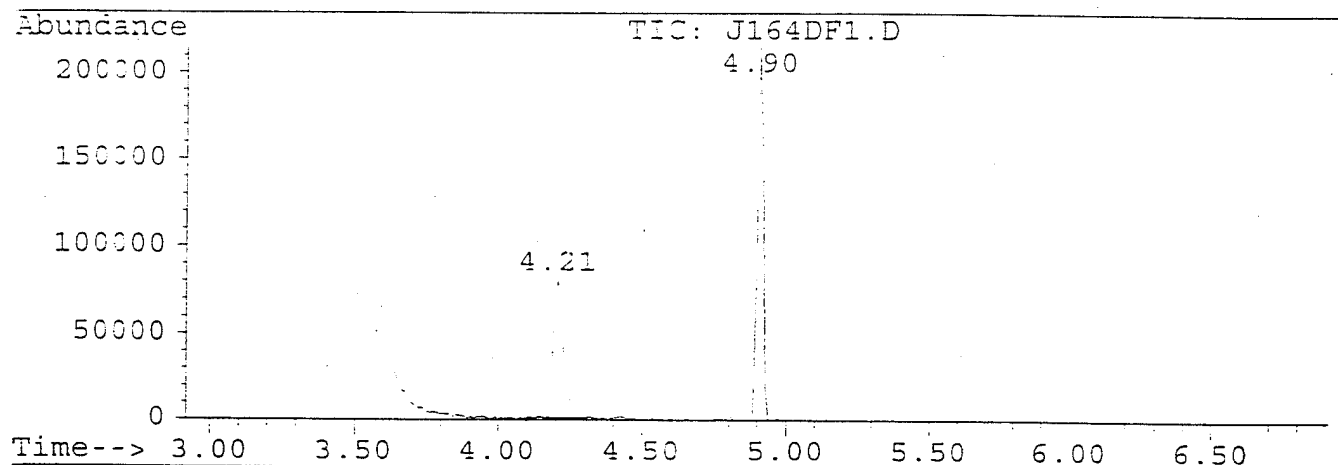

Idelis Williams, QC Officer

DFTPP

Data File : C:\HPCHEM\1\DATA\J940613\J164DF1.D
Acq On : 13 Jun 94 2:17 pm
Sample : 50 ng DFTPP
Misc : 940613 50 ng DFTPP

Vial: 1
Operator: LH
Inst : j
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\ENVDEF.M
Title :



Peak Apex is scan: 127

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	40.6	7571	PASS
69	69	0	2	0.0	0	PASS
69	198	0	100	54.9	10226	PASS
70	69	0	2	0.0	0	PASS
127	198	40	60	42.4	7891	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	18632	PASS
199	198	5	9	6.0	1127	PASS
275	198	10	30	23.4	4360	PASS
365	198	1	100	3.6	680	PASS
441	443	0	100	87.7	2073	PASS
442	198	40	100	72.6	13531	PASS
443	442	17	23	17.5	2363	PASS

Data File: /chem/j.1/j940613.b/j164df1.d

Page 1

Date : 13-JUN-94 14:17

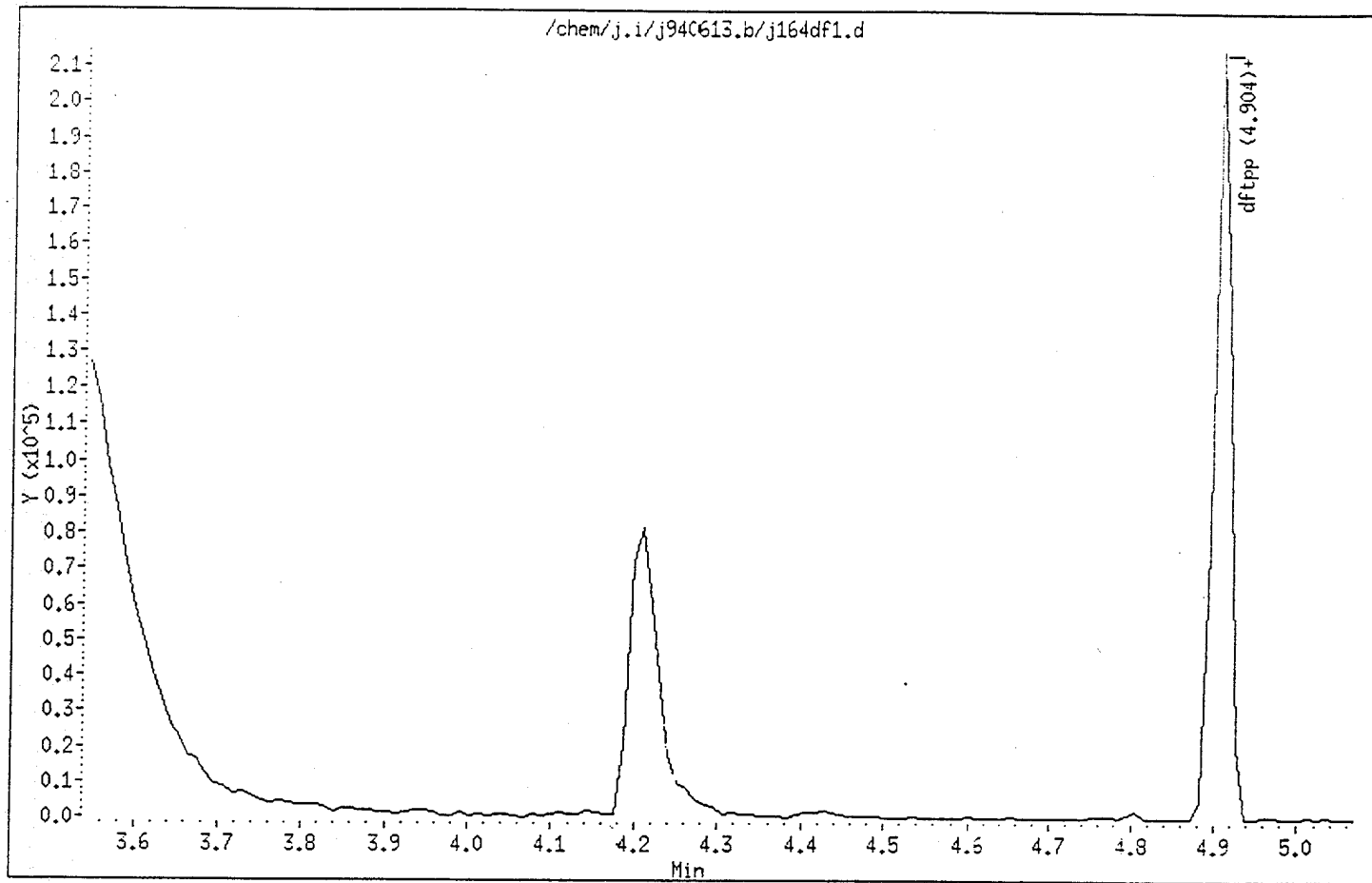
Instrument : j.i

Sample ID :

Column phase :

Column diameter : 2.00

Volume Injected (uL) : 1.0



SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i Injection Date: 13-JUN-1994 14:28
Lab File ID: j164cc1.d Init. Calibration Date(s): 06/08/94 06/08/94
Analysis Type: WATER Init. Calibration Times: 11:31 15:50
Lab Sample ID: Method File: /chem/j.i/j940613.b/jbna8.m
Quant Type: ISTD

COMPOUND	RRF	RFSD	MIN RRF	MAX %D	MAX %D
1 N-Nitrosodimethylamine	0.619	0.734	0.010	18.6	0.0
2 Pyridine	1.396	1.337	0.010	4.3	0.0
\$ 3 2-Fluorophenol	1.200	1.377	0.010	14.8	25.0
4 Aniline	2.022	2.076	0.010	2.7	0.0
\$ 5 Phenol-d5	1.651	1.596	0.010	2.7	25.0
6 Phenol	1.875	1.994	0.800	6.4	25.0
7 bis(2-Chloroethyl)ether	1.333	1.444	0.700	8.3	25.0
\$ 8 2-Chlorophenol-d4	1.422	1.628	0.010	14.5	25.0
9 2-Chlorophenol	1.386	1.561	0.800	12.6	25.0
10 1,3-Dichlorobenzene	1.654	1.877	0.010	13.5	25.0
12 1,4-Dichlorobenzene	1.667	1.916	0.010	15.0	25.0
\$ 13 1,2-Dichlorobenzene-d4	0.454	0.490	0.010	7.8	25.0
14 1,2-Dichlorobenzene	1.520	1.743	0.010	14.7	25.0
15 Benzyl alcohol	1.278	1.515	0.010	18.5	0.0
16 2-Methylphenol	1.278	1.515	0.010	18.5	25.0
17 ortho-Cresol	1.243	1.393	0.010	12.1	25.0
18 bis(2-chloroisopropyl)ether	1.401	1.506	0.010	7.5	0.0
19 meta,para-Cresol	1.345	1.441	0.010	7.1	25.0
20 4-Methylphenol	1.345	1.441	0.010	7.1	25.0
21 N-Nitroso-di-n-propylamine	0.990	1.099	0.010	11.0	25.0
22 Hexachloroethane	0.758	0.841	0.010	11.0	25.0
\$ 23 Nitrobenzene-d5	0.433	0.473	0.010	9.2	25.0
24 Nitrobenzene	0.409	0.441	0.010	7.9	25.0
25 Isophorone	0.827	0.878	0.010	6.1	25.0
26 2-Nitrophenol	0.233	0.262	0.010	12.5	25.0
27 2,4-Dimethylphenol	0.428	0.450	0.010	5.2	25.0
28 bis(2-Chloroethoxy)methane	0.429	0.464	0.010	8.2	25.0
29 Benzoic acid	0.329	0.354	0.010	7.7	0.0
30 2,4-Dichlorophenol	0.350	0.375	0.010	7.2	25.0
31 1,2,4-Trichlorobenzene	0.365	0.386	0.010	5.8	25.0
33 Naphthalene	1.105	1.152	0.010	4.2	25.0
34 4-Chloroaniline	0.496	0.535	0.010	8.0	0.0
35 Hexachlorobutadiene	0.213	0.243	0.010	14.1	0.0
36 4-Chloro-3-methylphenol	0.418	0.432	0.010	3.5	25.0
37 2-Methylnaphthalene	0.735	0.827	0.010	12.6	25.0
38 Hexachlorocyclopentadiene	0.254	0.302	0.010	19.1	0.0
39 2,4,6-Trichlorophenol	0.371	0.416	0.010	12.3	25.0
\$ 40 2-Fluorobiphenyl	1.239	1.254	0.010	1.3	25.0
41 2,4,5-Trichlorophenol	0.418	0.451	0.010	7.9	25.0
42 2-Chloronaphthalene	1.181	1.301	0.010	10.2	25.0

SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i Injection Date: 13-JUN-1994 14:28
Lab File ID: j164cc1.d Init. Calibration Date(s): 06/08/94 06/08/94
Analysis Type: WATER Init. Calibration Times: 11:31 15:50
Lab Sample ID: Method File: /chem/j.i/j940613.b/jbna8.m
Quant Type: ISTD

COMPOUND	RRF	RFSO	MIN RRF	MAX %D	MAX %D
43 2-Nitroaniline	0.429	0.441	0.010	2.6	0.0
44 Dimethylphthalate	1.481	1.519	0.010	2.6	0.0
45 Acenaphthylene	1.913	2.066	0.010	8.0	25.0
46 2,6-Dinitrotoluene	0.338	0.374	0.010	10.7	25.0
47 3-Nitroaniline	0.373	0.389	0.010	4.3	0.0
49 Acenaphthene	1.147	1.241	0.010	8.1	25.0
50 2,4-Dinitrophenol	0.115	0.136	0.010	18.7	0.0
51 Dibenzofuran	1.748	1.781	0.010	1.9	25.0
52 2,4-Dinitrotoluene	1.216	1.180	0.010	3.0	25.0
53 4-Nitrophenol	0.233	0.228	0.010	2.0	0.0
54 Diethylphthalate	1.499	1.563	0.010	4.2	0.0
55 4-Chlorophenyl-phenylether	0.604	0.632	0.010	4.6	25.0
56 Fluorene	1.352	1.316	0.010	2.6	25.0
57 4-Nitroaniline	0.340	0.371	0.010	9.1	0.0
58 4,6-Dinitro-2-methylphenol	0.093	0.157	0.010	68.6	0.0
59 n-Nitrosodiphenylamine	0.620	0.677	0.010	9.3	0.0
60 1,2-Diphenylhydrazine	2.239	2.157	0.010	3.7	0.0
61 2,4,6-Tribromophenol	0.133	0.153	0.010	14.7	0.0
62 4-Bromophenyl-phenylether	0.236	0.252	0.010	6.9	25.0
63 Hexachlorobenzene	0.283	0.307	0.010	8.6	25.0
64 Pentachlorophenol	0.113	0.161	0.010	41.7	25.0
66 Phenanthrene	1.248	1.357	0.010	8.7	25.0
67 Anthracene	1.248	1.357	0.010	8.7	25.0
68 Carbazole	1.122	1.206	0.010	7.4	0.0
69 Di-n-butylphthalate	1.598	1.703	0.010	6.6	0.0
70 Fluoranthene	1.047	1.105	0.010	5.6	25.0
71 Pyrene	1.820	2.076	0.010	14.1	25.0
72 Terphenyl-d14	1.211	1.373	0.010	13.3	25.0
73 Butylbenzylphthalate	1.116	1.181	0.010	5.8	0.0
74 3,3'-Dichlorobenzidine	0.503	0.492	0.010	2.1	0.0
75 Benzo[a]anthracene	1.237	1.392	0.010	4.1	25.0
77 bis(2-Ethylhexyl)phthalate	1.458	1.420	0.010	2.6	0.0
78 Chrysene	1.216	1.251	0.010	2.9	25.0
79 Di-n-octylphthalate	2.556	2.486	0.010	2.7	0.0
80 Benzo[b]fluoranthene	1.235	1.330	0.010	7.6	25.0
81 Benzo[k]fluoranthene	1.235	1.330	0.010	7.6	25.0
82 Benzo[a]pyrene	1.122	1.210	0.010	7.8	25.0
84 Indeno[1,2,3-cd]pyrene	1.413	1.666	0.010	17.9	25.0
85 Dibenz[a,h]anthracene	1.117	1.326	0.010	18.8	25.0
86 Benzo[g,h,i]perylene	1.208	1.440	0.010	19.2	25.0

SPL Houston Labs

Data file : /chem/j.i/j940613.b/j164cc1.d

Lab. Id. : Quant Type: ISTD
Inj Date : 13-JUN-94 14:28 Autotune Date:
Operator : LH Inst ID: j.i

Smp Info : 940613 STD050

Misc Info : 940613 STD050

Comment :

Method : /chem/j.i/j940613.b/jbna8.m

Meth Date : 13-Jun-1994 14:51

Cal Date : 08-JUN-94 15:50

Cal File: j159ic06.d

Als bottle: 1

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: WATER

Compounds	QUANT SIG	CONCENTRATIONS				
		MASS	RT	REL RT	RESPONSE	ON-COLUMN FINAL (ng) (ug/L)
=====	----	==	=====	=====	=====	=====
1 N-Nitrosodimethylamine		74.00	2.017	(0.486)	78664	59 30
2 Pyridine		79.00	2.039	(0.491)	143316	46 24
S 3 2-Fluorophenol		112.00	3.062	(0.738)	147671	57 29
4 Aniline		93.00	3.878	(0.934)	222552	51 26
S 5 Phenol-d5		99.00	3.889	(0.937)	181803	51 26
6 Phenol		94.00	3.900	(0.939)	213856	53 26
7 bis(2-Chloroethyl)ether		93.00	3.922	(0.945)	154834	54 27
S 8 2-Chlorophenol-d4		132.00	3.988	(0.961)	174533	57 29
9 2-Chlorophenol		128.00	3.998	(0.963)	167439	56 28
10 1,3-Dichlorobenzene		146.00	4.119	(0.992)	201306	57 28
* 11 1,4-Dichlorobenzene-d4		152.00	4.151	(1.000)	95780	40
12 1,4-Dichlorobenzene		146.00	4.173	(1.005)	205461	57 29
S 13 1,2-Dichlorobenzene-d4		152.00	4.337	(0.585)	127772	54 27
14 1,2-Dichlorobenzene		146.00	4.359	(1.050)	186916	57 29
15 Benzyl alcohol		108.00	4.468	(1.076)	162424	59 30
16 2-Methylphenol		106.00	4.468	(1.076)	162424	59 30
17 ortho-Cresol		107.00	4.468	(1.076)	149334	56 28
18 bis(2-chloroisopropyl)ether		45.00	4.457	(1.074)	161435	54 27
19 meta,para-Cresol		103.00	4.610	(1.110)	154495	54 27
20 4-Methylphenol		108.00	4.610	(1.110)	154495	54 27
21 N-Nitroso-di-n-propylamine		70.00	4.599	(1.108)	117856	56 28
22 Hexachloroethane		117.00	4.565	(1.124)	90163	55 28
S 23 Nitrobenzene-d5		92.00	4.730	(0.864)	134460	54 27
24 Nitrobenzene		77.00	4.752	(0.863)	131610	54 27
25 Isophorone		82.00	4.992	(0.910)	360391	53 26
26 2-Nitrophenol		139.00	5.079	(0.925)	107810	56 28
27 2,4-Dimethylphenol		107.00	5.155	(0.942)	185202	53 26
28 bis(2-Chloroethoxy)methane		93.00	5.221	(0.954)	190945	54 27
29 Benzoic acid		122.00	5.155	(0.942)	145734	54 27

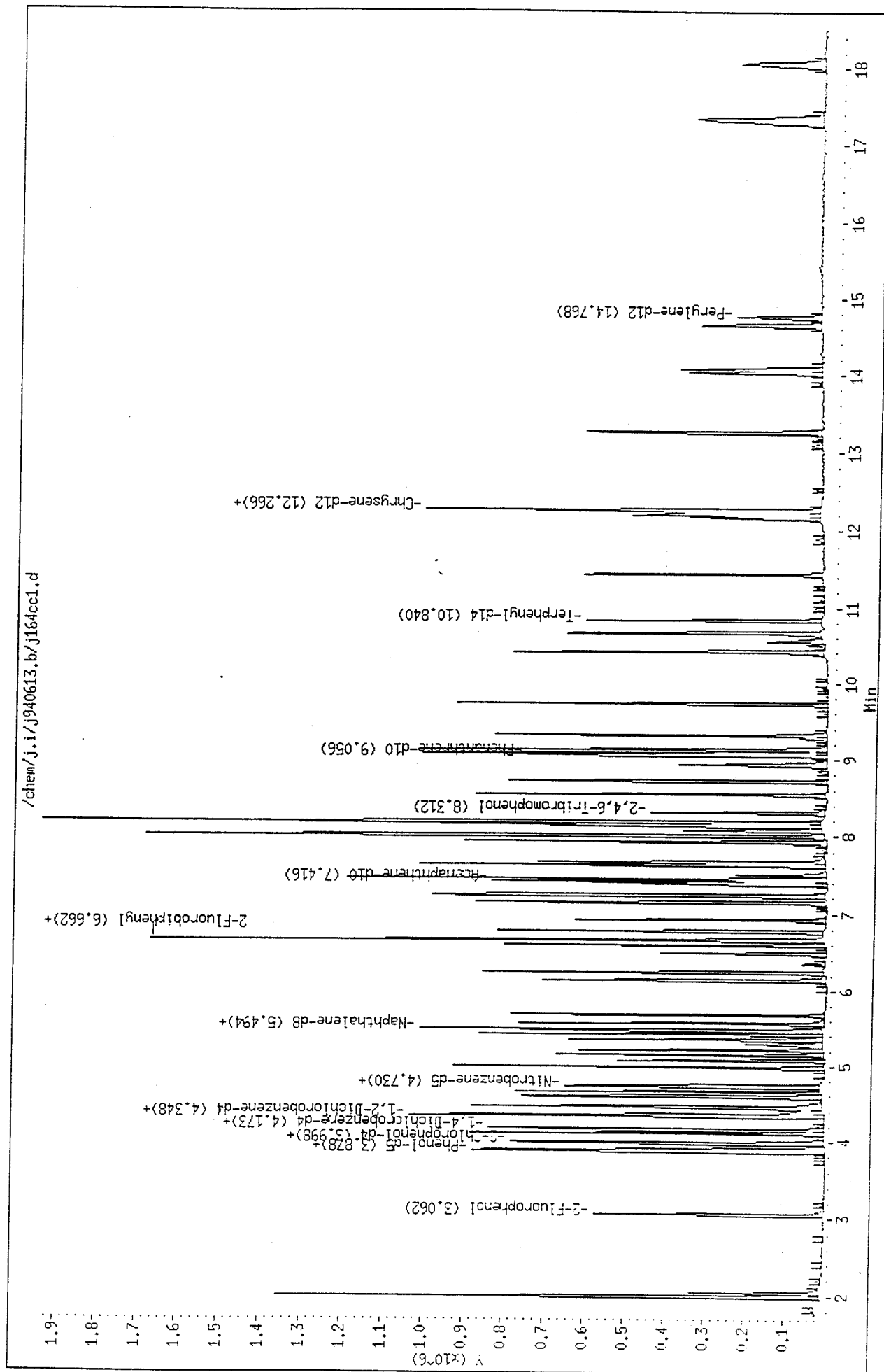
Compounds	QUANT SIG				CONCENTRATIONS	
	MASS	RT	REL RT	RESPONSE	ON-COLUMN (ng)	FINAL (ug/L)
-----	----	==	=====	-----	-----	-----
30 2,4-Dichlorophenol	162.00	5.363	(0.990)	154256	54	27
31 1,2,4-Trichlorobenzene	180.00	5.429	(0.992)	158762	53	26
32 Naphthalene-d8	136.00	5.472	(1.000)	329103	40	
33 Naphthalene	128.00	5.494	(1.004)	473946	52	26
34 4-Chloroaniline	127.00	5.571	(1.018)	220159	54	27
35 Hexachlorobutadiene	225.00	5.691	(1.040)	100076	57	28
36 4-Chloro-3-methylphenol	167.00	6.138	(1.122)	177910	52	26
37 2-Methylnaphthalene	142.00	6.247	(1.142)	340236	56	28
38 Hexachlorocyclopentadiene	237.00	6.498	(0.876)	78871	60	30
39 2,4,6-Trichlorophenol	196.00	6.596	(0.890)	108611	56	28
40 2-Fluorobiphenyl	172.00	6.662	(0.898)	327193	51	25
41 2,4,5-Trichlorophenol	196.00	6.662	(0.898)	117663	54	27
42 2-Chloronaphthalene	162.00	6.782	(0.915)	339378	55	28
43 2-Nitroaniline	65.00	6.924	(0.934)	114961	51	26
44 Dimethylphthalate	163.00	7.153	(0.965)	396257	51	26
45 Acenaphthylene	152.00	7.241	(0.976)	538824	54	27
46 2,6-Dinitrotoluene	165.00	7.230	(0.975)	97529	55	28
47 3-Nitroaniline	138.00	7.394	(0.997)	101453	52	26
48 Acenaphthene-d10	164.00	7.416	(1.000)	208681	40	
49 Acenaphthene	153.00	7.448	(1.004)	323625	54	27
50 2,4-Dinitrophenol	184.00	7.503	(1.012)	35561	59	30
51 Dibenzofuran	168.00	7.623	(1.028)	464553	51	25
52 2,4-Dinitrotoluene	165.00	8.017	(1.081)	307768	48	24
53 4-Nitrophenol	109.00	7.645	(1.031)	59513	49	24
54 Diethylphthalate	149.00	7.929	(1.069)	407701	52	26
55 4-Chlorophenyl-phenylether	204.00	8.006	(1.080)	164984	52	26
56 Fluorene	166.00	8.017	(1.081)	343284	49	24
57 4-Nitroaniline	138.00	8.083	(1.090)	96775	54	27
58 4,6-Dinitro-2-methylphenol	198.00	8.126	(0.897)	55443	84	42
59 n-Nitrosodiphenylamine	169.00	8.148	(0.900)	238454	55	27
60 1,2-Diphenylhydrazine	77.00	8.181	(0.903)	759358	48	24
61 2,4,6-Tribromophenol	330.00	8.312	(0.918)	53871	57	29
62 4-Bromophenyl-phenylether	248.00	8.542	(0.943)	88895	53	27
63 Hexachlorobenzene	284.00	8.717	(0.963)	108214	54	27
64 Pentachlorophenol	266.00	8.935	(0.987)	56624	71	35
65 Phenanthrene-d10	188.00	9.056	(1.000)	281650	40	
66 Phenanthrene	178.00	9.133	(1.008)	477602	54	27
67 Anthracene	178.00	9.133	(1.008)	477602	54	27
68 Carbazole	167.00	9.319	(1.029)	424416	54	27
69 Di-n-butylphthalate	149.00	9.734	(1.075)	599620	53	27
70 Fluoranthene	202.00	10.412	(1.150)	389129	53	26
71 Pyrene	202.00	10.675	(0.872)	371060	57	28
72 Terphenyl-d14	244.00	10.840	(0.885)	245343	57	28
73 Butylbenzylphthalate	149.00	11.454	(0.935)	211101	53	26
74 3,3'-Dichlorobenzidine	252.00	12.177	(0.995)	38001	49	24
75 Benzo[a]anthracene	228.00	12.210	(0.997)	248751	52	26
76 Chrysene-d12	240.00	12.244	(1.000)	142982	40	
77 bis(2-Ethylhexyl)phthalate	149.00	12.266	(1.002)	253716	49	24
78 Chrysene	228.00	12.277	(1.003)	223659	51	26

Compounds	QUANT SIG		RT	REL RT	RESPONSE	CONCENTRATIONS	
	MASS					IN-COLUMN	FINAL
						ng/	ug/L
-----	----	==	-----	-----	-----	-----	-----
79 Di-n-octylphthalate	149.00		13.264	(0.898)	466920	49	24
80 Benzo(b)fluoranthene	152.00		14.076	(0.953)	249732	54	27
81 Benzo(k)fluoranthene	152.00		14.076	(0.953)	249732	54	27
82 Benzo(a)pyrene	152.00		14.658	(0.993)	227267	54	27
83 Perylene-di2	264.00		14.768	(1.000)	150259	40	
84 Indeno(1,2,3-cd)pyrene	176.00		17.314	(1.170)	312882	59	29
85 Dibenzo(a,h)anthracene	178.00		17.347	(1.175)	249074	59	30
86 Benzo(g,h,i)perylene	276.00		18.060	(1.223)	270429	60	30

Data File: /chem/j.i/j940613.b/j164cc1.d
 Date : 13-JUL-94 14:28
 Instrument : J.i
 Sample ID :
 Column phase : J&W DB-5
 Volume Injected (uL) : 2.0

Page 4

Column diameter : 0.25



SPL Houston Labs

Data file : /chem/j.i/j940609.b/j160sbk1.d
Lab. Id. :
Inj Date : 09-JUN-1994 17:04
Operator : LH
Smp Info : 940608SNB1
Misc Info : 940608SNB1
Comment :
Method : /chem/j.i/j940609.b/jbna8.m
Meth Date : 15-JUN-1994 13:30 csadmin
Cal Date : 08-JUN-1994 12:47
Als bottle: 1
Dil Factor: 1.000
Integrator: HP RTE
Sample Matrix: SOIL

Quant Type: ISTD
Autotune Date: {
Inst ID: j.i

Cal File: j159ic04.d

Target Version: Target 3.00
Compound Sublist: all.sub

Compounds	QUANT SIG MASS	RT	REL RT	RESPONSE	CONCENTRATIONS	
					ON-COLUMN (ng)	FINAL (ug/Kg)
-----	----	--	-----	-----	-----	-----
\$ 3 2-Fluorophenol	112.00	3.074	(0.738)	326189	120	4000
\$ 5 Phenol-d5	99.00	3.891	(0.934)	374479	110	3600
\$ 8 2-Chlorophenol-d4	132.00	3.989	(0.958)	369597	110	3800
* 11 1,4-Dichlorobenzene-d4	152.00	4.164	(1.000)	80269	40	
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.350	(0.586)	170396	79	2600
\$ 23 Nitrobenzene-d5	82.00	4.731	(0.865)	265741	80	2600
\$ 32 Naphthalene-d8	136.00	5.471	(1.000)	293026	40	
\$ 40 2-Fluorobiphenyl	172.00	6.668	(0.899)	493140	84	2800
* 48 Acenaphthene-d10	164.00	7.419	(1.000)	183403	40	
\$ 51 2,4,6-Tribromophenol	330.00	8.312	(0.918)	135548	130	4400
* 65 Phenanthrene-d10	188.00	9.052	(1.000)	280989	40	
\$ 72 Terphenyl-d14	244.00	10.837	(0.885)	467963	83	2800
* 76 Chrysene-d12	240.00	12.243	(1.000)	157395	40	
* 83 Perylene-d12	264.00	14.763	(1.000)	128487	40	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

SPL Houston Labs

RECOVERY REPORT

Client Name: Client SDG: j940609.b
Sample Matrix: SOLID Fraction: SV
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: Quant Type: ISTD
Method File: /chem/j.i/j940609.b/jbna8.m
Misc Info: 940608SNB1

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED -	LIMITS
\$ 3 2-Fluorophenol	150	120	80.12	25-121
\$ 5 Phenol-d5	150	110	72.16	24-113
\$ 8 2-Chlorophenol-d4	150	110	75.32	20-130
\$ 13 1,2-Dichlorobenzen	100	79	78.84	20-130
\$ 23 Nitrobenzene-d5	100	80	79.76	23-120
\$ 40 2-Fluorobiphenyl	100	84	84.54	30-115
\$ 61 2,4,6-Tribromophen	150	130	88.59	19-122
\$ 72 Terphenyl-d14	100	83	82.88	18-137

* - Values outside of QC limits

Spike Recovery: 0 out of 8 outside limits
0 out of 8 not found

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j160sbk1.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940609.b/jbna8.m
 Misc Info: 940608SNB1

Calibration Date: 06/09/94
 Calibration Time: 1609
 Sample Type: SOIL
 Level: LOW

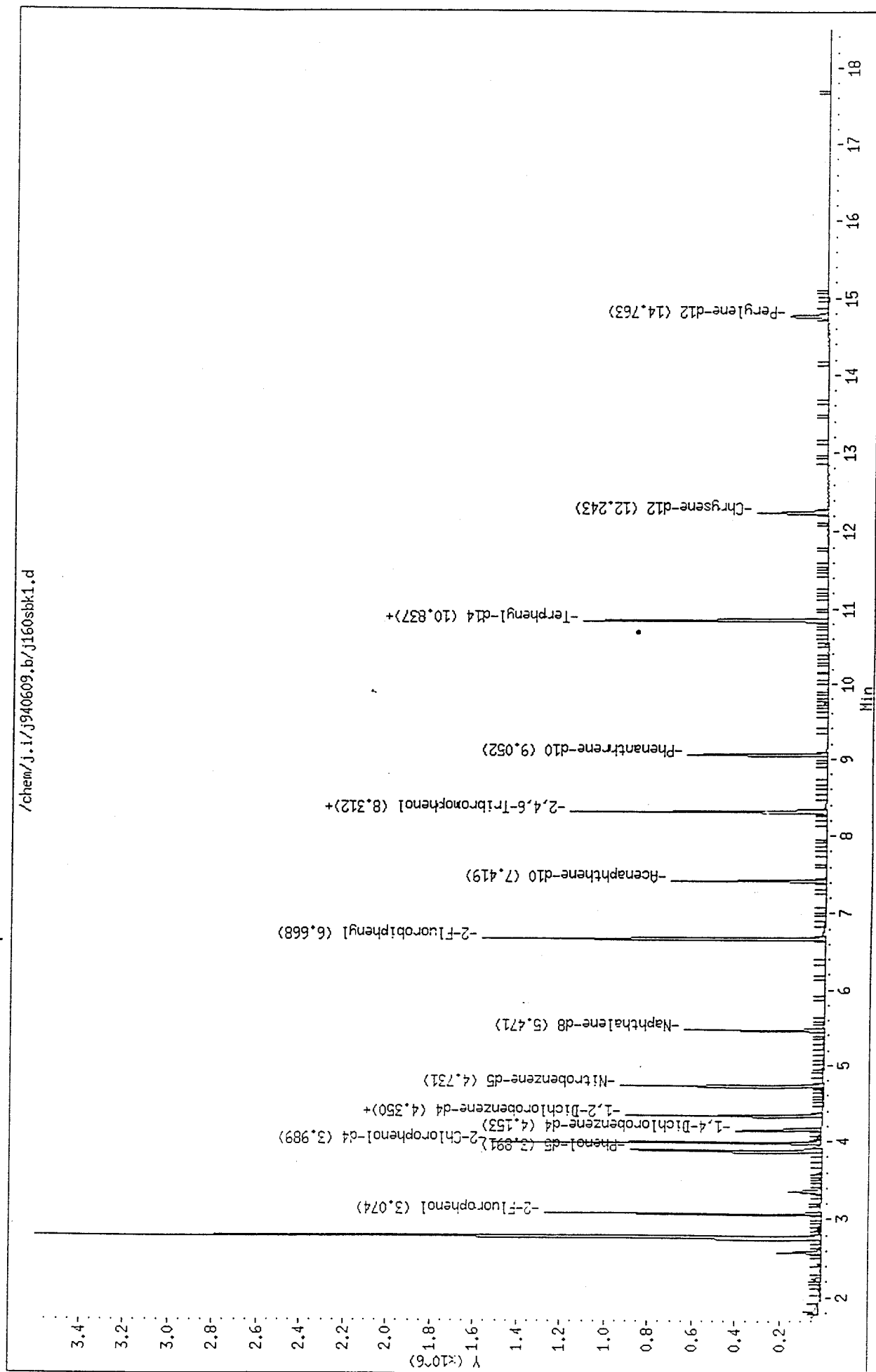
COMPOUND	STANDARD	AREA LIMIT		SAMPLE -	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	74530	37265	149060	80269	7.70
32 Naphthalene-d8	288821	144410	577642	293026	1.46
48 Acenaphthene-d10	187312	93656	374624	183403	-2.09
65 Phenanthrene-d10	253525	126762	507050	280989	10.83
76 Chrysene-d12	118083	59041	236166	157395	33.29
83 Perylene-d12	127432	63716	254864	128487	0.83

COMPOUND	STANDARD	RT LIMIT		SAMPLE	% DIFF
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.16	3.66	4.66	4.16	0.05
32 Naphthalene-d8	5.47	4.97	5.97	5.47	-0.02
48 Acenaphthene-d10	7.41	6.91	7.91	7.42	0.06
65 Phenanthrene-d10	9.05	8.55	9.55	9.05	-0.02
76 Chrysene-d12	12.24	11.74	12.74	12.24	0.01
83 Perylene-d12	14.77	14.27	15.27	14.76	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j940609.b/j160sbk1.d
 Date : 09-JUN-1994 17:04
 Instrument : j.i
 Sample ID :
 Column phase : J&M DB-5
 Volume Injected (uL) : 1.0

Column diameter : 0.25



DFTPP

Data File : C:\HPCHEM\1\DATA\J940617\J168DF1.D

Acq On : 17 Jun 94 9:28 am

Sample : 50 ng DFTPP

Misc : 940617 50 ng DFTPP

Vial: 1

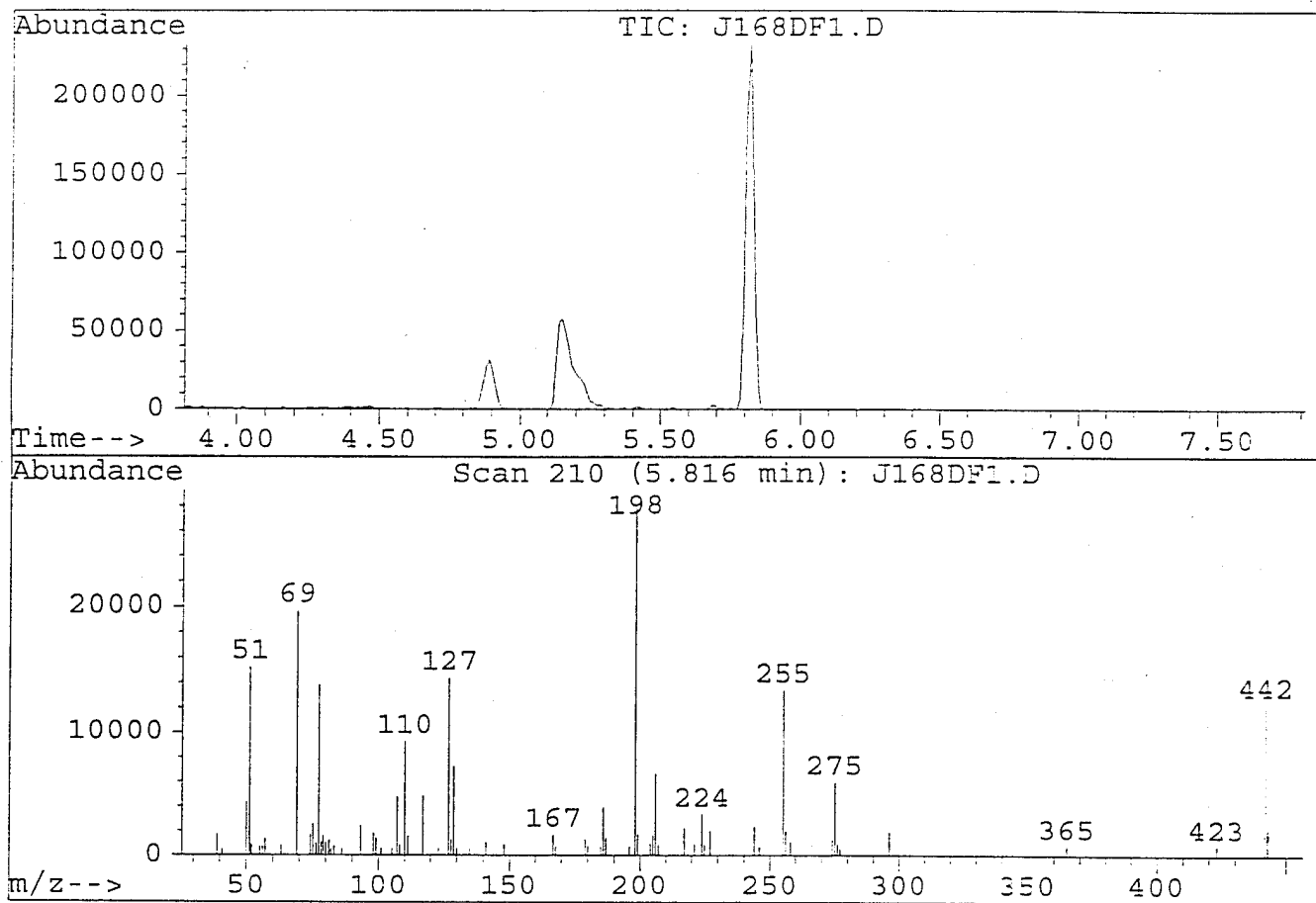
Operator: LH

Inst : i

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\ENVDEF.M

Title :



Peak Apex is scan: 210

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	54.4	15181	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	70.3	19624	PASS
70	69	0	2	0.0	0	PASS
127	198	40	60	51.4	14333	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	27904	PASS
199	198	5	9	6.1	1707	PASS
275	198	10	30	21.1	5398	PASS
365	198	1	100	2.6	736	PASS
441	443	0	100	84.1	1317	PASS
442	198	40	100	43.7	12192	PASS
443	442	17	23	17.7	2160	PASS

SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j168cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 17-JUN-1994 09:39
Init. Calibration Date(s): 06/16/94 06/16/94
Init. Calibration Times: 13:44 16:37
Method File: /chem/j.i/j940617.b/jclpw.m

COMPOUND	RRF	RF50	MIN	MAX
-----	-----	-----	-----	-----
1 N-Nitrosodimethylamine	0.760	0.909	0.010	19.7
2 Pyridine	1.284	1.497	0.010	16.7
\$ 3 2-Fluorophenol	1.342	1.483	0.600	10.5
4 Aniline	1.896	2.091	0.010	10.3
\$ 5 Phenol-d5	1.732	1.914	0.800	10.5
6 Phenol	1.866	2.104	0.800	12.8
7 bis(2-Chloroethyl)ether	1.856	1.968	0.700	6.0
\$ 8 2-Chlorophenol-d4	1.542	1.688	0.800	9.5
9 2-Chlorophenol	1.487	1.645	0.800	10.6
10 1,3-Dichlorobenzene	1.733	1.896	0.600	9.4
12 1,4-Dichlorobenzene	1.698	1.884	0.500	10.9
\$ 13 1,2-Dichlorobenzene-d4	0.493	0.534	0.400	8.2
14 1,2-Dichlorobenzene	1.584	1.760	0.400	11.1
15 Benzyl alcohol	0.549	1.748	0.010	218.2
16 2-Methylphenol	1.528	1.748	0.700	14.4
17 ortho-Cresol	1.528	1.748	0.700	14.4
18 bis(2-chloroisopropyl)ether	1.405	1.633	0.010	16.3
19 meta,para-Cresol	1.393	1.543	0.600	10.8
20 4-Methylphenol	1.393	1.543	0.600	10.8
21 N-Nitroso-di-n-propylamine	0.990	1.089	0.500	10.0
22 Hexachloroethane	0.736	0.826	0.300	12.2
\$ 23 Nitrobenzene-d5	0.439	0.491	0.200	11.8
24 Nitrobenzene	0.421	0.460	0.200	9.2
25 Isophorone	0.824	0.899	0.400	9.1
26 2-Nitrophenol	0.239	0.267	0.100	11.6
27 2,4-Dimethylphenol	0.405	0.451	0.200	11.4
28 bis(2-Chloroethoxy)methane	0.426	0.474	0.300	11.2
29 Benzoic acid	0.317	0.344	0.010	8.6
30 2,4-Dichlorophenol	0.329	0.369	0.200	12.2
31 1,2,4-Trichlorobenzene	0.333	0.375	0.200	12.8
33 Naphthalene	1.045	1.173	0.700	12.2
34 4-Chloroaniline	0.469	0.534	0.010	13.7
35 Hexachlorobutadiene	0.202	0.217	0.010	7.5
36 4-Chloro-3-methylphenol	0.390	0.439	0.200	12.6
37 2-Methylnaphthalene	0.751	0.817	0.400	8.9
38 Hexachlorocyclopentadiene	0.282	0.262	0.010	6.8
39 2,4,6-Trichlorophenol	0.356	0.370	0.200	3.9
\$ 40 2-Fluorobiphenyl	1.227	1.285	0.700	4.7
41 2,4,5-Trichlorophenol	0.410	0.425	0.200	3.6
42 2-Chloronaphthalene	1.228	1.296	0.300	5.6

SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j168cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 17-JUN-1994 09:39
Init. Calibration Date(s): 06/16/94 06/16/94
Init. Calibration Times: 13:44 16:37
Method File: /chem/j.i/j940617.b/jclpw.m

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
43 2-Nitroaniline	0.424	0.466	0.010	9.7	0.0
44 Dimethylphthalate	1.390	1.557	0.010	12.0	0.0
45 Acenaphthylene	1.939	2.087	1.300	7.6	25.0
46 2,6-Dinitrotoluene	0.337	0.372	0.200	10.3	25.0
47 3-Nitroaniline	0.361	0.399	0.010	10.3	0.0
49 Acenaphthene	1.124	1.208	0.800	7.5	25.0
50 2,4-Dinitrophenol	0.140	0.141	0.010	0.6	0.0
51 Dibenzofuran	1.585	1.772	0.800	11.8	25.0
52 2,4-Dinitrotoluene	0.415	0.451	0.200	8.8	25.0
53 4-Nitrophenol	0.191	0.210	0.010	9.4	0.0
54 Diethylphthalate	1.322	1.561	0.010	18.1	0.0
55 4-Chlorophenyl-phenylether	0.541	0.598	0.400	10.6	25.0
56 Fluorene	1.230	1.378	0.900	12.0	25.0
57 4-Nitroaniline	0.304	0.343	0.010	12.6	0.0
58 4,6-Dinitro-2-methylphenol	0.156	0.162	0.010	4.0	0.0
59 n-Nitrosodiphenylamine	0.648	0.712	0.010	9.8	0.0
60 1,2-Diphenylhydrazine	2.337	2.641	0.010	13.0	0.0
61 2,4,6-Tribromophenol	0.121	0.130	0.010	7.4	0.0
62 4-Bromophenyl-phenylether	0.229	0.243	0.100	6.2	25.0
63 Hexachlorobenzene	0.267	0.279	0.100	4.4	25.0
64 Pentachlorophenol	0.117	0.114	0.050	1.9	25.0
66 Phenanthrene	1.295	1.387	0.700	7.1	25.0
67 Anthracene	1.263	1.340	0.700	6.0	25.0
68 Carbazole	1.079	1.199	0.010	11.1	0.0
69 Di-n-butylphthalate	1.493	1.629	0.010	9.1	0.0
70 Fluoranthene	0.943	1.024	0.600	3.7	25.0
71 Pyrene	1.889	2.230	0.600	18.1	25.0
72 Terphenyl-d14	1.225	1.368	0.500	11.7	25.0
73 Butylbenzylphthalate	1.172	1.311	0.010	11.8	0.0
74 3,3'-Dichlorobenzidine	0.479	0.522	0.010	9.1	0.0
75 Benzo[a]anthracene	1.387	1.475	0.800	6.3	25.0
77 bis(2-Ethylhexyl)phthalate	1.557	1.701	0.010	9.3	0.0
78 Chrysene	1.262	1.426	0.700	13.0	25.0
79 Di-n-octylphthalate	2.675	2.984	0.010	7.8	0.0
80 Benzo[b]fluoranthene	1.310	1.443	0.700	10.1	25.0
81 Benzo[k]fluoranthene	1.334	1.340	0.700	0.4	25.0
82 Benzo[a]pyrene	1.147	1.235	0.700	7.6	25.0
84 Indeno[1,2,3-cd]pyrene	1.367	1.477	0.500	6.0	25.0
85 Dibenz[a,h]anthracene	1.088	1.153	0.400	5.9	25.0
86 Benzo[g,h,i]perylene	1.147	1.274	0.500	11.1	25.0

SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168cc1.d

Lab. Id. :

Quant Type: ISTD

Inj Date : 17-JUN-1994 09:39

Autotune Date: {

Operator : LH

Inst ID: j.i

Smp Info : 940617 STD050

Misc Info : 940617 STD050

Comment :

Method : /chem/j.i/j940617.b/jclpw.m

Meth Date : 22-Jun-1994 20:11 liping

Cal Date : 17-JUN-1994 09:39

Als bottle: 1

Dil Factor: 1.000

Integrator: HP RTE

Sample Matrix: WATER

Cal File: j168cc1.d

Continuing Calibration Sample

Target Version: Target 3.00

Compound Sublist: all.sub

Compounds	QUANT SIG		CONCENTRATIONS			
	MASS	RT	REL RT	RESPONSE	ON-COLUMN	FINAL
					(ng)	(ug/L)
=====	=====	==	=====	=====	=====	=====
1 N-Nitrosodimethylamine	74.00	2.654	(0.553)	137734	60	30
2 Pyridine	79.00	2.687	(0.560)	226854	58	29
\$ 3 2-Fluorophenol	112.00	3.689	(0.768)	224745	55	28
4 Aniline	93.00	4.517	(0.941)	316775	55	28
\$ 5 Phenol-d5	99.00	4.495	(0.936)	289966	55	28
6 Phenol	94.00	4.506	(0.939)	318774	56	28
7 bis(2-Chloroethyl)ether	93.00	4.550	(0.948)	298183	53	26
\$ 8 2-Chlorophenol-d4	132.00	4.626	(0.964)	255720	55	27
9 2-Chlorophenol	128.00	4.637	(0.966)	249182	55	28
10 1,3-Dichlorobenzene	146.00	4.768	(0.993)	287206	55	27
* 11 1,4-Dichlorobenzene-d4	152.00	4.801	(1.000)	121206	40	
12 1,4-Dichlorobenzene	146.00	4.812	(1.002)	285441	55	28
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.997	(0.615)	183991	54	27
14 1,2-Dichlorobenzene	146.00	5.008	(1.043)	266640	56	28
15 Benzyl alcohol	108.00	5.085	(1.059)	264785	160	80
16 2-Methylphenol	108.00	5.085	(1.059)	264785	57	29
17 ortho-Cresol	108.00	5.085	(1.059)	264785	57	29
18 bis(2-chloroisopropyl)ether	45.00	5.085	(1.059)	247415	58	29
19 meta,para-Cresol	108.00	5.238	(1.091)	233829	55	28
20 4-Methylphenol	108.00	5.238	(1.091)	233829	55	28
21 N-Nitroso-di-n-propylamine	70.00	5.238	(1.091)	164984	55	27
22 Hexachloroethane	117.00	5.326	(1.109)	125093	56	28
\$ 23 Nitrobenzene-d5	82.00	5.380	(0.877)	273373	56	28
24 Nitrobenzene	77.00	5.402	(0.881)	255928	55	27
25 Isophorone	82.00	5.642	(0.920)	500759	54	27
26 2-Nitrophenol	139.00	5.741	(0.936)	148509	56	28
27 2,4-Dimethylphenol	107.00	5.784	(0.943)	250849	56	28
28 bis(2-Chloroethoxy)methane	93.00	5.861	(0.955)	263715	56	28
29 Benzoic acid	122.00	5.784	(0.943)	191599	54	27

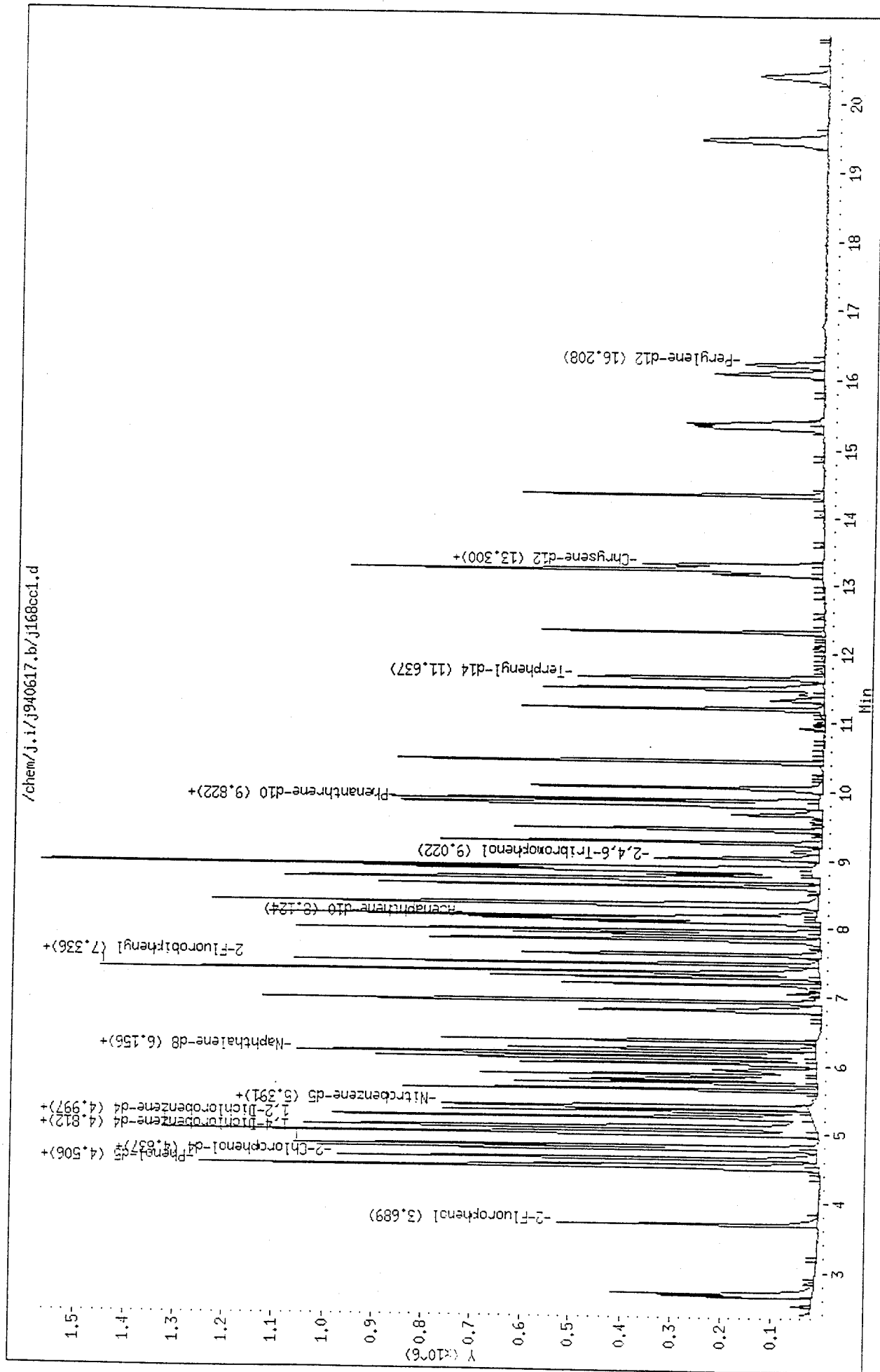
Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	REL RT	RESPONSE	ON-COLUMN	FINAL
						ng	ug/L
=====	=====	=====	=====	=====	=====	=====	=====
30 2,4-Dichlorophenol	162.00	6.014 (0.990)	205274	56	28		
31 1,2,4-Trichlorobenzene	180.00	6.090 (0.993)	208923	56	28		
* 32 Naphthalene-d8	136.00	6.134 (1.000)	445390	40			
33 Naphthalene	128.00	6.167 (1.005)	552853	56	28		
34 4-Chloroaniline	127.00	6.233 (1.016)	297059	57	28		
35 Hexachlorobutadiene	225.00	6.353 (1.036)	120868	54	27		
36 4-Chloro-3-methylphenol	107.00	6.789 (1.107)	244241	56	28		
37 2-Methylnaphthalene	142.00	6.921 (1.128)	454882	54	27		
38 Hexachlorocyclopentadiene	237.00	7.172 (0.883)	90476	47	23		
39 2,4,6-Trichlorophenol	196.00	7.271 (0.895)	127591	52	26		
\$ 40 2-Fluorobiphenyl	172.00	7.336 (0.903)	442821	52	26		
41 2,4,5-Trichlorophenol	196.00	7.336 (0.903)	146420	52	26		
42 2-Chloronaphthalene	162.00	7.468 (0.919)	446622	53	26		
43 2-Nitroaniline	65.00	7.610 (0.937)	160481	55	27		
44 Dimethylphthalate	163.00	7.818 (0.962)	536535	56	28		
45 Acenaphthylene	152.00	7.949 (0.978)	719482	54	27		
46 2,6-Dinitrotoluene	165.00	7.916 (0.974)	128159	55	28		
47 3-Nitroaniline	138.00	8.080 (0.995)	137432	55	28		
* 48 Acenaphthene-d10	164.00	8.124 (1.000)	275750	40			
49 Acenaphthene	153.00	8.157 (1.004)	416465	54	27		
50 2,4-Dinitrophenol	184.00	8.201 (1.009)	48660	50	25		
51 Dibenzofuran	168.00	8.332 (1.026)	610854	56	28		
52 2,4-Dinitrotoluene	165.00	8.354 (1.028)	155611	54	27		
53 4-Nitrophenol	109.00	8.332 (1.026)	72215	55	27		
54 Diethylphthalate	149.00	8.617 (1.061)	538184	59	30		
55 4-Chlorophenyl-phenylether	204.00	8.704 (1.071)	206003	55	28		
56 Fluorene	166.00	8.726 (1.074)	474837	56	28		
57 4-Nitroaniline	138.00	8.781 (1.081)	118058	56	28		
58 4,6-Dinitro-2-methylphenol	198.00	8.836 (0.903)	68301	52	26		
59 n-Nitrosodiphenylamine	169.00	8.847 (0.904)	299745	55	27		
60 1,2-Diphenylhydrazine	77.00	8.880 (0.907)	1112421	56	28		
\$ 61 2,4,6-Tribromophenol	329.70	9.033 (0.923)	54758	54	27		
62 4-Bromophenyl-phenylether	248.00	9.252 (0.945)	102315	53	26		
63 Hexachlorobenzene	283.70	9.449 (0.965)	117316	52	26		
64 Pentachlorophenol	266.00	9.657 (0.987)	48225	49	24		
* 65 Phenanthrene-d10	188.00	9.789 (1.000)	336972	40			
66 Phenanthrene	178.00	9.822 (1.003)	584326	54	27		
67 Anthracene	178.00	9.866 (1.008)	564240	53	26		
68 Carbazole	167.00	10.052 (1.027)	504857	56	28		
69 Di-n-butylphthalate	149.00	10.434 (1.066)	686267	54	27		
70 Fluoranthene	202.00	11.199 (1.144)	431489	54	27		
71 Pyrene	202.00	11.484 (0.866)	408435	59	30		
\$ 72 Terphenyl-d14	244.00	11.637 (0.878)	250616	56	28		
73 Butylbenzylphthalate	149.00	12.304 (0.928)	240071	56	28		
74 3,3'-Dichlorobenzidine	252.00	13.156 (0.993)	95596	54	27		
75 Benzo[a]anthracene	228.00	13.223 (0.997)	270098	53	26		
* 76 Chrysene-d12	240.00	13.256 (1.000)	146532	40			
77 bis(2-Ethylhexyl)phthalate	149.00	13.211 (0.997)	311645	55	27		
78 Chrysene	228.00	13.300 (1.003)	261230	56	28		

Compounds	QUANT SIG		REL RT	RESPONSE	CONCENTRATIONS	
	MASS	RT			ON-COLUMN (ng)	FINAL (ug/L)
=====	====	==	=====	=====	=====	=====
79 Di-n-octylphthalate	149.00	14.338	(0.885)	578425	54	27
80 Benzo(b)fluoranthene	252.00	15.322	(0.945)	289408	55	28
81 Benzo(k)fluoranthene	252.00	15.366	(0.948)	268710	50	25
82 Benzo(a)pyrene	252.00	16.076	(0.992)	247673	54	27
83 Perylene-d12	264.00	16.208	(1.000)	160474	40	
84 Indeno(1,2,3-cd)pyrene	276.00	19.442	(1.200)	296183	54	27
85 Dibenzo(a,h)anthracene	278.00	19.486	(1.202)	231185	53	26
86 Benzo(g,h,i)perylene	276.00	20.404	(1.253)	255601	56	28

Data File: /chem/j.i./j940617.b/j168ccl.d
 Date : 17-JUN-1994 09:39
 Instrument : j.i
 Sample ID :
 Column phase : J&M DB-5
 Volume Injected (ul) : 2.0

Page 4

Column diameter : 0.25



SPL Houston Labs

Data file : /chem/j.i/j940617.b/j168sbk1.d

Lab. Id. :

Quant Type: ISTD

Inj Date : 17-JUN-1994 12:52

Autotune Date: {

Operator : LH

Inst ID: j.i

Smp Info : 940615SNB1

Misc Info : 940615SNB1

Comment :

Method : /chem/j.i/j940617.b/jclps.m

Meth Date : 22-Jun-1994 13:38 liping

Cal Date : 17-JUN-1994 09:39

Cal File: j168cc1.d

Als bottle: 7

Dil Factor: 1.000

Target Version: Target 3.00

Integrator: HP RTE

Compound Sublist: all.sub

Sample Matrix: SOIL

Compounds	QUANT SIG		CONCENTRATIONS			
	MASS	RT	REL RT	RESPONSE	ON-COLUMN	FINAL
					(ng)	(ug/Kg)
-----	----	==	-----	-----	-----	-----
\$ 3 2-Fluorophenol	112.00	3.688	(0.772)	569982	110	1800
\$ 5 Phenol-d5	99.00	4.484	(0.938)	708161	100	1700
\$ 8 2-Chlorophenol-d4	132.00	4.615	(0.966)	639570	100	1800
* 11 1,4-Dichlorobenzene-d4	152.00	4.779	(1.000)	144227	40	
\$ 13 1,2-Dichlorobenzene-d4	152.00	4.976	(0.615)	291824	68	1100
\$ 23 Nitrobenzene-d5	82.00	5.358	(0.875)	502472	79	1300
* 32 Naphthalene-d8	136.00	6.122	(1.000)	514970	40	
\$ 40 2-Fluorobiphenyl	172.00	7.321	(0.904)	861455	84	1400
* 48 Acenaphthene-d10	164.00	8.096	(1.000)	319160	40	
\$ 61 2,4,6-Tribromophenol	329.70	9.012	(0.922)	169927	110	1900
* 65 Phenanthrene-d10	188.00	9.776	(1.000)	455663	40	
\$ 72 Terphenyl-d14	244.00	11.632	(0.879)	710333	84	1400
* 76 Chrysene-d12	240.00	13.229	(1.000)	246231	40	
* 83 Perylene-d12	264.00	16.186	(1.000)	117924	40	

SPL Houston Labs

RECOVERY REPORT

Client Name: Client SDG: j940617.b
Sample Matrix: SOLID Fraction: SV
Client ID: Level: LOW
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: 8270s.spk Quant Type: ISTD
Method File: /chem/j.i/j940617.b/jclps.m
Misc Info: 940615SNB1

SURROGATE COMPOUND	AMOUNT ADDED ng	AMOUNT RECOVERED ng	% RECOVERED	LIMITS
\$ 3 2-Flucrophenol	150	110	71.04	25-121
\$ 5 Phenol-d5	150	100	68.41	24-113
\$ 8 2-Chlorophenol-d4	150	100	70.06	20-130
\$ 13 1,2-Dichlorobenzen	100	68	68.52	20-130
\$ 23 Nitrobenzene-d5	100	79	79.48	23-120
\$ 40 2-Fluorobiphenyl	100	84	84.04	30-115
\$ 61 2,4,6-Tribromophen	150	110	76.50	19-122
\$ 72 Terphenyl-d14	100	84	84.34	18-137

* - Values outside of QC limits

Spike Recovery: 0 out of 8 outside limits
0 out of 8 not found

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: j.i
 Lab File ID: j168sbk1.d
 Lab Sample ID:
 Analysis Type: SV
 Quant Type: ISTD
 Method File: /chem/j.i/j940617.b/jclps.m
 Misc Info: 940615SNB1

Calibration Date: 06/17/94
 Calibration Time: 0939
 Sample Type: SOIL
 Level: LOW

COMPOUND =====	STANDARD =====	AREA LIMIT		SAMPLE =====	% DIFF =====
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	121206	60603	242412	144227	18.99
32 Naphthalene-d8	445390	222695	890780	514970	15.62
48 Acenaphthene-d10	275750	137875	551500	319160	15.74
65 Phenanthrene-d10	336972	168486	673944	455663	35.22
76 Chrysene-d12	146532	73266	293064	246231	68.04
83 Perylene-d12	160474	80237	320948	117924	-26.52

COMPOUND =====	STANDARD =====	RT LIMIT		SAMPLE =====	% DIFF =====
		LOWER	UPPER		
11 1,4-Dichlorobenzene-	4.80	4.30	5.30	4.78	-0.46
32 Naphthalene-d8	6.13	5.63	6.63	6.12	-0.21
48 Acenaphthene-d10	8.12	7.62	8.62	8.10	-0.35
65 Phenanthrene-d10	9.79	9.29	10.29	9.78	-0.13
76 Chrysene-d12	13.26	12.76	13.76	13.23	-0.20
83 Perylene-d12	16.21	15.71	16.71	16.19	-0.14

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i./j940617.b/j168sbk1.d

Date : 17-JUN-1994 12:52

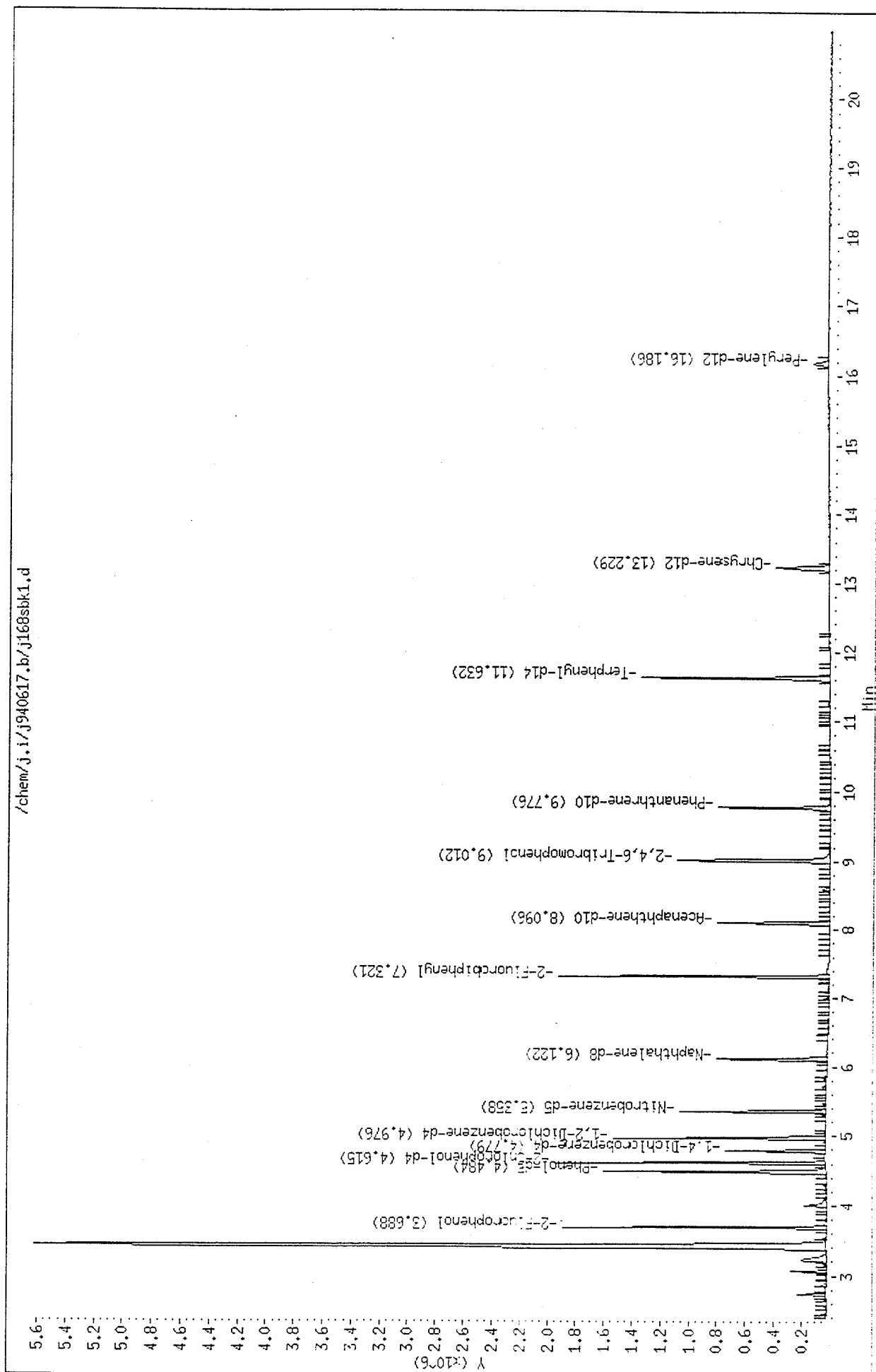
Instrument : j.i

Sample ID :

Column phase : J&W DB-5

Volume Injected (uL) : 2.0

Column diameter : 0.25





Certificate of Analysis No. 9406119-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:20:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		
	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons-Diesel	17	4 P	mg/Kg
Surrogate n-Pentacosane	% Recovery		
Mod. 8015 - Diesel	220 *		
Analyzed by: SEG			
Date: 06/13/94 11:22:01			
Sonication extraction	06/08/94		
METHOD 3550			
Analyzed by: LJ			
Date: 06/08/94			
Silver, Total	ND	0.6	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			
Arsenic, Total	16	0.2 I	mg/Kg
METHOD 7060 ***			
Analyzed by: WFL			
Date: 06/15/94			
Beryllium, Total	0.6	0.1 I	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			

(P) - Practical Quantitation Limit
// - Defined in attachment.

* - Defined in attachment.
ND - Not detected.

I - Instrument detection
Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:20:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	1.20	0.05	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	7	1	mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	24	0.6 M	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	5	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	14	1.0 M	mg/Kg

ND - Not detected.

M - Methods detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

PROJECT NO: 1308-191

SITE:

MATRIX: SOIL

SAMPLED BY: Operational Technologies

DATE SAMPLED: 06/02/94 16:20:00

SAMPLE ID: A-01 BH Int.1

DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	15	2		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M		mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I		mg/Kg

// - Defined in attachment.

ND - Not detected.

M - Methods detection li

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:20:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		
	RESULTS	DETECTION LIMIT	UNITS
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4	mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	57	0.8 M	mg/Kg

ND - Not detected.

M - Methods detection li

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

PROJECT NO: 1308-191

SITE:

MATRIX: SOIL

SAMPLED BY: Operational Technologies

DATE SAMPLED: 06/02/94 16:28:00

SAMPLE ID: A-01 BH Int.2

DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		DETECTION LIMIT	UNITS
	RESULTS			
Total Petroleum Hydrocarbons-Diesel	4.4		4 P	mg/Kg
Surrogate	% Recovery			
n-Pentacosane		148 *		
Mod. 8015 - Diesel				
Analyzed by: SEG				
Date: 06/13/94 11:22:01				
Sonication extraction		06/08/94		
METHOD 3550				
Analyzed by: LJ				
Date: 06/08/94				
Silver, Total	ND		0.6	mg/Kg
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				
Arsenic, Total	2		0.2 I	mg/Kg
METHOD 7060 ***				
Analyzed by: WFL				
Date: 06/15/94				
Beryllium, Total	0.6		0.1 M	mg/Kg
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				

(P) - Practical Quantitation Limit

* - Defined in attachment.

// - Defined in attachment.

ND - Not detected.

M - Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:28:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.03	0.01		mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	7	1		mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	12	0.6 M		mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M		mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	15	1		wt. %

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-01 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:28:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	4.0	1.0 M		mg/Kg
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	5.7	0.4		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M		mg/Kg

ND - Not detected.

// - Defined in attachment.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

PROJECT NO: 1308-191

SITE:

MATRIX: SOIL

SAMPLED BY: Operational Technologies

DATE SAMPLED: 06/02/94 16:28:00

SAMPLE ID: A-01 BH Int.2

DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I	mg/Kg	
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4	mg/Kg	
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	24	0.8 M	mg/Kg	

ND - Not detected.

M - Method detection lim

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

PROJECT NO: 1308-191

SITE:

MATRIX: SOIL

SAMPLED BY: Operational Technologies

DATE SAMPLED: 06/02/94 16:55:00

SAMPLE ID: A-02 BH Int.1

DATE RECEIVED: 06/03/94

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons-Diesel	71	4 P	mg/Kg
Surrogate	% Recovery		
n-Pentacosane	478 *		
Mod. 8015 - Diesel			
Analyzed by: SEG			
Date: 06/13/94 11:22:01			
Sonication extraction	06/08/94		
METHOD 3550			
Analyzed by: LJ			
Date: 06/08/94			
Silver, Total	ND	0.6	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			
Arsenic, Total	2	0.2 I	mg/Kg
METHOD 7060 ***			
Analyzed by: WFL			
Date: 06/15/94			
Beryllium, Total	0.8	0.1 M	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			

(P) - Practical Quantitation Limit
// - Defined in attachment.

* - Defined in attachment.
ND - Not detected.

M - Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:55:00
DATE RECEIVED: 06/03/94

PARAMETER		ANALYTICAL DATA		
		RESULTS	DETECTION LIMIT	UNITS
Cadmium, Total		0.17	0.01	mg/Kg
METHOD 7131 ***				
Analyzed by: WFL				
Date: 06/16/94				
Chromium, Total		5	1	mg/Kg
METHOD 7191 ***				
Analyzed by: WFL				
Date: 06/17/94				
Copper, Total		25	0.3 M	mg/Kg
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				
Mercury, Total		ND	0.02 M	mg/Kg
METHOD 7471 ***				
Analyzed by: JM				
Date: 06/08/94				
Moisture, E.P.A.		15	1	wt. %
METHOD CLP SOW				
Analyzed by: ST				
Date: 06/06/94				
Nickel, Total		10	1.0 M	mg/Kg
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				

ND - Not detected.

M - Method detection lim

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:55:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	10.0	0.4		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M		mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I		mg/Kg

// - Defined in attachment.

ND - Not detected.

M - Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 16:55:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4	mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	50	0.8 M mg/Kg	

ND - Not detected.

M - Method detection lim

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 17:08:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Total Petroleum Hydrocarbons-Diesel	ND	4 P		mg/Kg
Surrogate	% Recovery			
n-Pentacosane	81			
Mod. 8015 - Diesel				
Analyzed by: SEG				
Date: 06/13/94 11:22:01				
Sonication extraction	06/08/94			
METHOD 3550				
Analyzed by: LJ				
Date: 06/08/94				
Silver, Total	ND	0.6		mg/Kg
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				
Arsenic, Total	ND	0.2 I		mg/Kg
METHOD 7060 ***				
Analyzed by: WFL				
Date: 06/15/94				
Beryllium, Total	1.0	0.1 M		mg/Kg
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				

ND - Not detected.

(P) - Practical Quantitation Limit

I - Instrument detection limit

M - Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 17:08:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		DETECTION LIMIT	UNITS
	RESULTS			
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.04		0.01	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	1		1	mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	22		0.6 M mg/Kg	
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND		0.02 M mg/Kg	
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	20		1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	13		1.0 M mg/Kg	

ND - Not detected.

M - Method detection lim

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 17:08:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	10	2	mg/Kg	
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	5.7	3.0 M	mg/Kg	
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I	mg/Kg	

// - Defined in attachment.

ND - Not detected.

M - Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-02 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 17:08:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4		mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	43	0.8 M		mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:50:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Total Petroleum Hydrocarbons-Diesel	ND	4 P	mg/Kg	
Surrogate	% Recovery			
n-Pentacosane	87			
Mod. 8015 - Diesel				
Analyzed by: SEG				
Date: 06/13/94 11:22:01				
Sonication extraction	06/08/94			
METHOD 3550				
Analyzed by: LJ				
Date: 06/08/94				
Silver, Total	ND	0.6	mg/Kg	
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				
Arsenic, Total	4	1	mg/Kg	
METHOD 7060 ***				
Analyzed by: WFL				
Date: 06/15/94				
Beryllium, Total	0.8	0.4	mg/Kg	
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				

ND - Not detected.

(P) - Practical Quantitation Limit

// - Defined in attachment.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:50:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.04	0.01	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	9	1	mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	28	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	18	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	12	6	mg/Kg

ND - Not detected.

M- Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

PROJECT NO: 1308-191

SITE:

MATRIX: SOIL

SAMPLED BY: Operational Technologies

DATE SAMPLED: 06/02/94 15:50:00

SAMPLE ID: A-03 BH Int.1

DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		
	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94		
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	9	2	mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M	mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I	mg/Kg

ND - Not detected.

M -Method detection limit

I -Instrument detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:50:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4	mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	55	1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:55:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Total Petroleum Hydrocarbons-Diesel	ND	4 P	mg/Kg	
Surrogate	% Recovery			
n-Pentacosane	88			
Mod. 8015 - Diesel				
Analyzed by: SEG				
Date: 06/13/94 11:22:01				
Sonication extraction	06/08/94			
METHOD 3550				
Analyzed by: LJ				
Date: 06/08/94				
Silver, Total	ND	0.6	mg/Kg	
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				
Arsenic, Total	12	5	mg/Kg	
METHOD 7060 ***				
Analyzed by: WFL				
Date: 06/15/94				
Beryllium, Total	1.0	0.4	mg/Kg	
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:55:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.04	0.01		mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	16	10		mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	35	1		mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M		mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	18	1		wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	14	6		mg/Kg

ND - Not detected.

M- Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BE Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:55:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	10	2	mg/Kg	
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M	mg/Kg	
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I	mg/Kg	

ND - Not detected.

I -instrument detection limit M -Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-03 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:55:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		DETECTION LIMIT	UNITS
	RESULTS			
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND		0.4	mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	57		1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:20:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Total Petroleum Hydrocarbons-Diesel Mod. 8015 - Diesel Analyzed by: SEG Date: 06/13/94 11:22:01	1600	100 P	mg/Kg	
Sonication extraction METHOD 3550 Analyzed by: LJ Date: 06/08/94	06/08/94			
Silver, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	0.6	mg/Kg	
Arsenic, Total METHOD 7060 *** Analyzed by: WFL Date: 06/15/94	9	0.2 I	mg/Kg	
Beryllium, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	0.6	0.1 M	mg/Kg	
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	2.60	0.05	mg/Kg	

(P) - Practical Quantitation Limit

ND - Not detected.

I - Instrument detection limit M - Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:20:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	5	1		mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	27	0.6 M		mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M		mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	9	1		wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	10	1.0 M		mg/Kg

ND - Not detected.

M - Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:20:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	16	2		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M		mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	0.4	0.2 I		mg/Kg

ND - Not detected.

M - Method detection limit

I - Instrument detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:20:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4		mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	96	10		mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:40:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Total Petroleum Hydrocarbons-Diesel	ND	4 P		mg/Kg
Surrogate	% Recovery			
n-Pentacosane				
Mod. 8015 - Diesel				
Analyzed by: SEG	94			
Date: 06/13/94 11:22:01				
Sonication extraction				
METHOD 3550	06/08/94			
Analyzed by: LJ				
Date: 06/08/94				
Silver, Total	ND	0.6		mg/Kg
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				
Arsenic, Total	6	0.2 I		mg/Kg
METHOD 7060 ***				
Analyzed by: WFL				
Date: 06/15/94				
Beryllium, Total	0.8	0.1 M		mg/Kg
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				

ND - Not detected.

(P) - Practical Quantitation Limit
I - Instrument detection limit

M- Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:40:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.03	0.01	mg/Kg	
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	8	1	mg/Kg	
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	15	0.6 M	mg/Kg	
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M	mg/Kg	
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	16	1	wt. %	
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	10	1 M	mg/Kg	

ND - Not detected.

M - Method detection limits

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

***Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

PROJECT NO: 1308-191

SITE:

MATRIX: SOIL

SAMPLED BY: Operational Technologies

DATE SAMPLED: 06/02/94 11:40:00

SAMPLE ID: A-04 BH Int.2

DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	10.0	0.4		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M		mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I		mg/Kg

ND - Not detected.

M -Method detection limit

I - Instrument detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-04 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 11:40:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4		mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	33	0.8 M		mg/Kg

ND - Not detected.

M -Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:15:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		
	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons-Diesel	370	4 P	mg/Kg
Surrogate	% Recovery		
n-Pentacosane	75		
Mod. 8015 - Diesel			
Analyzed by: SEG			
Date: 06/13/94 11:22:01			
Sonication extraction	06/08/94		
METHOD 3550			
Analyzed by: LJ			
Date: 06/08/94			
Silver, Total	ND	0.6	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			
Arsenic, Total	15	5	mg/Kg
METHOD 7060 ***			
Analyzed by: WFL			
Date: 06/15/94			
Beryllium, Total	0.6	0.1 M	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			

(P) - Practical Quantitation Limit // - Defined in attachment.
ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:15:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.75	0.01		mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	30	10		mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	20	0.6 M		mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M		mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	4	1		wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	8	1 M		mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

PROJECT NO: 1308-191

SITE:

MATRIX: SOIL

SAMPLED BY: Operational Technologies

DATE SAMPLED: 06/02/94 13:15:00

SAMPLE ID: A-05 BH Int.1

DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		DETECTION LIMIT	UNITS
	RESULTS			
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	23	2		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	4.4	3.0 M		mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	0.6	0.2 I		mg/Kg

ND - Not detected.

M - Method detection limit

I - Instrument detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA

**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.

***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

PROJECT NO: 1308-191

SITE:

MATRIX: SOIL

SAMPLED BY: Operational Technologies

DATE SAMPLED: 06/02/94 13:15:00

SAMPLE ID: A-05 BH Int.1

DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4		mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	91	10		mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:18:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Total Petroleum Hydrocarbons-Diesel	ND	4 P	mg/Kg	
Surrogate	% Recovery			
n-Pentacosane	92			
Mod. 8015 - Diesel				
Analyzed by: SEG				
Date: 06/13/94 11:22:01				
Sonication extraction	06/08/94			
METHOD 3550				
Analyzed by: LJ				
Date: 06/08/94				
Silver, Total	ND	0.6	mg/Kg	
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				
Arsenic, Total	ND	5	mg/Kg	
METHOD 7060 ***				
Analyzed by: WFL				
Date: 06/15/94				
Beryllium, Total	1.2	0.1 M	mg/Kg	
METHOD 6010 ***				
Analyzed by: DQ				
Date: 06/15/94				

ND - Not detected.

(P) - Practical Quantitation Limit

M- Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:18:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.02	0.01	mg/Kg	
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	10	4	mg/Kg	
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	13	0.6 M	mg/Kg	
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M	mg/Kg	
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	16	1	wt. %	
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	10	1.0 M	mg/Kg	

ND - Not detected.

M- Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station

SITE:

SAMPLED BY: Operational Technologies

SAMPLE ID: A-05 BH Int.2

PROJECT NO: 1308-191

MATRIX: SOIL

DATE SAMPLED: 06/02/94 13:18:00

DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		
	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94		
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	9.4	0.4	mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	3.3	3.0 M	mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I	mg/Kg

ND - Not detected.

M- Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-05 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:18:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4	mg/Kg	
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	30	0.8 M	mg/Kg	

ND - Not detected.

M- Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:50:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA			
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons-Diesel	20	4 P	mg/Kg
Surrogate	% Recovery		
n-Pentacosane			
Mod. 8015 - Diesel	153 *		
Analyzed by: SEG			
Date: 06/13/94 11:22:01			
Sonication extraction	06/08/94		
METHOD 3550			
Analyzed by: LJ			
Date: 06/08/94			
Silver, Total	ND	0.6	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			
Arsenic, Total	6	5	mg/Kg
METHOD 7060 ***			
Analyzed by: WFL			
Date: 06/15/94			
Beryllium, Total	0.7	0.4	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			

(P) - Practical Quantitation Limit
// - Defined in attachment.

* - Defined in attachment.
ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:50:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.90	0.01		mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	10	2		mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	22	1		mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M		mg/K
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	15	1		wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	17	6		mg/Kg

ND - Not detected.

M -Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:50:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA		DETECTION LIMIT	UNITS
	RESULTS			
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	16	2		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M		mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I		mg/Kg

ND - Not detected.

M - Method detection limit

I - Instrument detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 13:50:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4		mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	57	1		mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 14:10:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons-Diesel	ND	4 P	mg/Kg
Surrogate	% Recovery		
n-Pentacosane	86		
Mod. 8015 - Diesel			
Analyzed by: SEG			
Date: 06/13/94 11:22:01			
Sonication extraction	06/08/94		
METHOD 3550			
Analyzed by: LJ			
Date: 06/08/94			
Silver, Total	ND	0.6	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			
Arsenic, Total	2	1	mg/Kg
METHOD 7060 ***			
Analyzed by: WFL			
Date: 06/15/94			

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 14:10:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Beryllium, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	0.1 M		mg/Kg
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.01	0.01		mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	2.3	0.2		mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	6	1		mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M		mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	13	1		wt. %

ND - Not detected.

M- Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 14:10:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	1.0 M		mg/K
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	4.9	0.4		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M		mg/Kg

ND - Not detected.

M -Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-06 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 14:10:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I		mg/Kg
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4		mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	20	1		mg/Kg

ND - Not detected.

I - Instrument detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:00:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons-Diesel	23	4 P	mg/Kg
Surrogate	% Recovery		
n-Pentacosane	130		
Mod. 8015 - Diesel			
Analyzed by: SEG			
Date: 06/13/94 11:22:01			
Sonication extraction	06/08/94		
METHOD 3550			
Analyzed by: LJ			
Date: 06/08/94			
Silver, Total	ND	0.6	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			
Arsenic, Total	8	5	mg/Kg
METHOD 7060 ***			
Analyzed by: WFL			
Date: 06/15/94			
Beryllium, Total	0.7	0.4	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			

(P) - Practical Quantitation Limit // - Defined in attachment.
ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:00:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.19	0.01		mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	8	1		mg/Kg
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	17	1		mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M		mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	8	1		wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	13	6		mg/Kg

ND - Not detected.

M -Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with
EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:00:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	8.4	0.4		mg/Kg
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M		mg/Kg
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I		mg/

ND - Not detected.

M - Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:00:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4		mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	49	1		mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:07:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons-Diesel	ND	4 P	mg/Kg
Surrogate	% Recovery		
n-Pentacosane	86		
Mod. 8015 - Diesel			
Analyzed by: SEG			
Date: 06/13/94 11:22:01			
Sonication extraction	06/08/94		
METHOD 3550			
Analyzed by: LJ			
Date: 06/08/94			
Silver, Total	ND	0.6	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			
Arsenic, Total	9	5	mg/Kg
METHOD 7060 ***			
Analyzed by: WFL			
Date: 06/15/94			
Beryllium, Total	0.9	0.4	mg/Kg
METHOD 6010 ***			
Analyzed by: DQ			
Date: 06/15/94			

ND - Not detected.

(P) - Practical Quantitation Limit

// - Defined in attachment.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:07:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Cadmium, Total METHOD 7131 *** Analyzed by: WFL Date: 06/16/94	0.08	0.01	mg/Kg	
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 06/17/94	9	1	mg/Kg	
Copper, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	22	1	mg/Kg	
Mercury, Total METHOD 7471 *** Analyzed by: JM Date: 06/08/94	ND	0.02 M	mg/Kg	
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ST Date: 06/06/94	17	1	wt. %	
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	16	6	mg/Kg	

ND - Not detected.

M -Method detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:07:00
DATE RECEIVED: 06/03/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/13/94	06/13/94			
Acid Digestion-Solid, ICP METHOD 3050 Analyzed by: AM Date: 06/13/94	06/13/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/15/94	11	4	mg/Kg	
Antimony, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	ND	3.0 M	mg/Kg	
Selenium, Total METHOD 7740 *** Analyzed by: WFL Date: 06/15/94	ND	0.2 I	mg/Kg	

ND - Not detected.

M -Method detection limit I -Instrument detection limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406119-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Mark Escobar

DATE: 07/25/94

PROJECT: Zanesville ANG Station
SITE:
SAMPLED BY: Operational Technologies
SAMPLE ID: A-07 BH Int.2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/02/94 15:07:00
DATE RECEIVED: 06/03/94

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
Thallium, Total METHOD 7841 *** Analyzed by: WFL Date: 06/16/94	ND	0.4		mg/Kg
Zinc, Total METHOD 6010 *** Analyzed by: DQ Date: 06/15/94	52	1		mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.



Matrix: Soil
Sample ID: 9406272-01B
Batch ID: VARC940613112201

Reported on: 06/21/94 08:23:57
Analyzed on: 06/13/94 11:22:01
Analyst: SEG

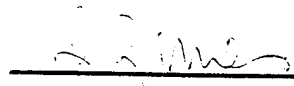
This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Petroleum Hydrocarbons-Diesel (Soil)
Mod. 8015 - Diesel

COMPOUND	Sample Value mg/Kg	Spike Added mg/Kg	MS % Recovery #	MSD % Recovery #	Relative % Difference #
Petroleum Hydrocarbons	4.8	258.45	107	98	9

NOTES

column to be used to flag recovery and RPD values with an asterisk
* values outside of QC Limits.


Idelis Williams, QC Officer

Idelis Williams, QC Officer



SPL QUALITY CONTROL SUMMARY

Rev. 04

Atomic Absorption Analysis

Element: As
Test Code: P30509
Method: GFFAA
Instrument: 3030Z

Date: 6/15/94
Time: 07:18
File #: 0615A

Analyst: WFC
Matrix: ☒ Soil ☐ Water

Units: mg/kg

Leachate: ☐ Water ☐ Oil ☐ Other

Sample #'s in Batch

06119-1C-14			
06220-1D, 2D			
06221-1D-4D			

Blank and Check Standard

Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Matrix Spike and Spike Duplicate Data			
					Spike Added	Spike Conc.	Spike Dup. Conc.	Spike Dup. % Rec
06220-2D	ND	112.0	102.0%	ND	40.0	35.6	34.9	89.0%
06378-7C	ND	112.0	100.4%	12.5	40.0	56.1	55.9	109.0%

FLAGS

- ☐ * = Values Outside QC Range
- ☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)
- ☒ RPD out of QA/QC Limits (20 %)
- ☒ Soil LCS % Rec. Range 54.7-166
- ☒ Sample used for QA/QC only
- ☐ See Case Narrative

Analyst: William F. Gwalt Date: 6/15/94
Approved By: K. Chubel Date: 6/15/94
J. Williams Date: 6/15/94
Idelis Williams, QC Officer



Units	Sold	Other
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91		
92		
93		
94		
95		
96		
97		
98		
99		
100		

[illegible]

See Case Narrative

Analyst	Wally Fagard	Date	6/16/94
Approved By	C. Chubb	Date	6/17/94
	E. Zmudis	Date	6/17/94
Idelis Williams, QC Officer			

SPL QUALITY CONTROL SUMMARY

Rev. 4-74

Atomic Absorption Analysis

Element: CA
Test Code: P3050G
Method: GC/FA
Instrument: 30302

Date: 6/17/94
Time: 07:15
File #: 0617A

Analyst: WFC
Matrix: Soil ☒

Units wcjlfg

Leachate: ☒ Water ☐ Soil ☐ Oil ☐ Other

Sample #'s in Batch

[illegible][illegible]

• FLAGS •	<input type="checkbox"/>	• = Values Outside QC Range
	<input type="checkbox"/>	MS or MSD out of QA/QC Limits (% Rec. 75-125)
	<input checked="" type="checkbox"/>	RPD out of QA/QC Limits (20 %)
	<input checked="" type="checkbox"/>	Soil LCS % Rec. Range <u>110 - 261</u>
	<input type="checkbox"/>	Sample used for QA/QC only
	<input type="checkbox"/>	See Case Narrative

Analyst	Wally Fawad	Date	6/17/94
Approved By	<i>[Signature]</i>	Date	6/17/94
	<i>[Signature]</i>	Date	6/17/94
Idelis Williams, QC Officer			

Idelis Williams, QC Officer



SPL QUALITY CONTROL SUMMARY

Atomic Absorption Analysis

Rev. 4/91

Element: Hg Date: 6/8/94 Analyst: JM Units: mg/kg

Test Code: HgSC Time: 15:05 Matrix: Soil ☒ Water ☐ Soil

Method: 7471 File #: 0608E Leachate: ☐ Water ☐ Oil ☐ Other

Instrument: 83030

Sample #'s in Batch

9405C40-11B-18B	9405D83-3D	9405D00-1C, 2C, 4C, 5C, 6C, 7C, 8C	10A, 12C - AC
9405D02-15C	9405D38-1C, 2C	9405D39-1A - 4A	19A, 20A, 25A, 26A
9405D45-2C, 3C, 4C, 5C, 7C, 8C, 10C-13C		9405D46-32A	
940611A-1A, 3E, 4C-6C		9406119-1C-14C	
9406220-1D, 2D		9406221-1D-4D	

Sample ID	Blank and Check Standard		Matrix Spike and Spike Duplicate Data			
	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Spike Added	Spike Conc.	Spike Dup. Conc.
9405C40-11B	#1 ND	32.0	#1 74.6*	2.00	2.04	1.98
9405D00-1C	#2 ND	32.0	#2 62.4*		2.08	1.97
9406112-1A	#3 ND	32.0	#3 72.2*		1.68	2.04
9406221-4D	#4 ND	32.0	#4 100.2	✓	2.36	2.21

Sample Conc.	0.25	ND	ND	ND
Spike Dup. % Rec.	86.5	98.5	102.0	110.5
% RPD	3	5	19	7

FLAGS *

* = Values Outside QC Range

MS or MSD out of QA/QC Limits (% Rec. 75-125)

RPD out of QA/QC Limits (20 %)

Soil LCS % Rec. Range (53-150)

Sample used for QA/QC only

See Case Narrative

Analyst Jane manogian Date 6/8/94

Approved By Paul Chudal Date 6/9/94

J Williams Date 6/9/94

Idelis Williams, QC Officer



Wet Chemistry QA/QC Validation Report

Test Name: moistureSAM Test Code: moisepDate: 6/6/94Analyst: STMethod GravimetricTime: 2:00 pmMatrix ☐ Liquid ☒ Soil ☐ Other# of Samples in Batch: 25Reporting Units: % weight

SPL Sample #'s in Batch:

9406068-3C → 4C	9406119-1C → 14C	
9406055-4C		
9406112-1A, 3E, 4C → 6C		
9406121-1A → 3A		

Standards	Actual Concentration	Theoretical Concentration	Percent Recovery	QC Limits (**) (Mandatory)	
				Upper Limit	Lower Limit
Blank					
Check Standard 1					
Check Standard 2					
Check Standard 3					
LCS (Outside Source)					

DUPLICATES

QA/QC Duplicate SPL Sample ID	Sample Result <1>	Sample Result <2>	Relative Percent Difference	QC LIMITS (**) (Advisory)	
				Relative Percent Difference Max.	
9406055-4C	12	12	0	30.4	
9406112-6C	18	20	10.5		
9406119-6C	12	13	8.0		
9406119-10C	17	18	5.7		
9406119-14C	20	20	0		✓

Relative Percent Difference (RPD) Calculation:

$$RPD = \frac{<1> - <2>}{(|<1> + <2>|) \times 0.5} \times 100$$

(**) = Source: SPL Houston Historical Data

* = Indicates Value Outside QA/QC Range

Approved By: [Signature]Date: 6/7/94Reviewed By: [Signature]Date: 6/7/94[Signature]
Idelis Williams, QC OfficerDate: 6/7/94



SPL QUALITY CONTROL SUMMARY

Rev 4/94

Atomic Absorption Analysis

Element: PB
Test Code: P3050G
Method: GFAA
Instrument: 30302

Date: 6/15/94
Time: 07:15
File #: 0615A

Analyst: WFC
Matrix: Sol

Units: mg/kg

Water ☐

Leachate: ☐ Water ☐

☐ Oil ☐ Other

Sample #'s in Batch

06119-c-14c	06378-7c			
06282-5b				
06298-1c				
06405-3c4c				
06348-7b				

Blank and Check Standard

Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Matrix Spike and Spike Duplicate Data			
					Spike Added	Spike Conc.	Spike Dup. Conc.	Spike Dup. % Rec.
06378-7c	NB	122.0	85.7%	41.0	40.0	70.0	71.2	72.5%
0620-2b	NB	122.0	73.9%	16.3	40.0	46.4	46.8	75.2%
								76.2%

AGS*

* = Values Outside QC Range

MS or MSD out of QA/QC Limits (% Rec. 75-125)

RPD out of QA/QC Limits (20%)

Soil LCS % Rec. Range 62.3 - 178

Sample used for QA/QC only

See Case Narrative

Analyst Wally Fegwal Date 6/15/94

Approved By R. Anderson Date 6/15/94

Idelis Williams Date 6/16/94
Idelis Williams, QC Officer



SPL QUALITY CONTROL SUMMARY

Atomic Absorption Analysis

Rev 001

Element: Sr
Test Code: P3050G
Method: GF-AA
Instrument: 30302

Date: 6/15/94
Time: 12:49
File #: 0615B

Analyst: WFE
Matrix: Sol
Units: mg/kg

Leachate: ☒ Soil ☐ Water ☐
☐ Oil ☐ Other

Sample #'s in Batch

16119-1c-14c			
26220-1b, 2d			
26221-1b, 4d			
16062-1B-3B			

Blank and Check Standard

Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
6220-2B	MB	122.0	81.8%	MB	30.0	28.2	28.6	94.0%	95.3%	1
6378-7c	MB	122.0	105.1%	MB	30.0	26.0	28.4	86.7%	94.7%	9
6062-3B	MB	122.0	104.4%	49.4	30.0	78.0	79.2	95.3%	99.3%	4
LCS 6/14	MB	122.0	95.7%	MB	30.0					

* = Values Outside QC Range

MS or MSD out of QA/QC Limits (% Rec. 75-125)

RPD out of QA/QC Limits (20 %)

Soil LCS % Rec. Range 62.3 - 178.0

Sample used for QA/QC only

See Case Narrative

LAGS *

- ☐
- ☐
- ☒
- ☒
- ☐

Analyst: Walley Fagard Date: 6/15/94
Approved By: [Signature] Date: 6/16/94
Idelis Williams, QC Officer Date: 6/16/94



0616B

PROGRAMMING MODE INSTRUMENT USER METH # 11 CD DATE: 04/06/16
ELEMENT: CD WAVELENGTH (NM): 228.8 SLIT (NM): 0.7
PYRO COATED TUBE WITH PLATFORM - MAX POWER HEATING - GAS STOP - MATPIX MOD.
PRETREAT TEMP: 900 ATOMIZE TEMP: 1600 CHARACTER, MASS (PG) 0.35

- 1. TECHNIQUE: ZEEMAN
- 2. LAMP CURRENT (MA): 5
- 3. SIGNAL PROCESSING: PEAK AREA
- 4. CALIBRATION: AUTO SELECT
- 5. TIME (SECONDS): 5.0
- 6. READ DELAY (SECONDS): 0.0
- 7. SCREEN FORMAT: 1.0 GRAPHICS
- 8. PRINTER: MAIN SUPPL
- 9. RECORDER SIGNAL: 0.2 CONT ABS
- 10. RECORDER EXP: 1000
- 11. STATISTICS: 2 AVERAGE & CV
- 12. NOMINAL WEIGHT 1.0
- 13. ROLLOVER(AES): 1.000
- 14. EC SCALE: 1.0

15. S1: 2.50 16. S2: 5.00 17. S3: 16.00
18. S4: 19. S5: 20. S6:
21. S7: 22. S8: 23. S9: 5.06

0616B

CD TIME: 11:10

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.010
0.007

EG
0.002
0.006

READ: 0.006

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.008
0.001

EG
0.002
0.007

READ: 0.001

MEAN= 0.004 STD. DEV. =
0.000 AUTOZERO

COEF. VAR. = 87.41 %

CD

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.679
0.390

EG
0.100
0.060

READ: 0.325

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.680
0.391

EG
0.110
0.062

READ: 0.324

MEAN= 0.325 STD. DEV. =
2.50 STANDARD 1

COEF. VAR. = 0.20 %

CD

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.158
0.710

EG
0.209
0.111

Copy Top

CD

PEAK HEIGHT (ABSORBANCE) AA 0.013 ZAA 0.012 EC 0.002
PEAK AREA (ABS-SECONDS) 0.005 0.007 0.002

READ: 0.002

PEAK HEIGHT (ABSORBANCE) AA 0.009 ZAA 0.009 EC 0.004
PEAK AREA (ABS-SECONDS) 0.004 0.004 0.004

READ: -0.001

MEAN= 0.001 STD.DEV.= 99.999
0.000 AUTOZERO

(CD)

COEF.VAR.= 99.999

PEAK HEIGHT (ABSORBANCE) AA 0.656 ZAA 0.555 EC 0.116
PEAK AREA (ABS-SECONDS) 0.393 0.321 0.082

READ: 0.315

PEAK HEIGHT (ABSORBANCE) AA 0.652 ZAA 0.544 EC 0.116
PEAK AREA (ABS-SECONDS) 0.378 0.317 0.081

READ: 0.311

MEAN= 0.313 STD.DEV.= 0.53

2.50 STANDARD I

(CD)

COEF.VAR.= 0.53

PEAK HEIGHT (ABSORBANCE) AA 1.116 ZAA 0.909 EC 0.319
PEAK AREA (ABS-SECONDS) 0.693 0.569 0.139

READ: 4.49

PEAK HEIGHT (ABSORBANCE) AA 1.107 ZAA 0.894 EC 0.311
PEAK AREA (ABS-SECONDS) 0.686 0.568 0.118

READ: 4.49

MEAN= 4.49 STD.DEV.= 0.06

4.49

(CD)

COEF.VAR.= 0.06

E-50: READING GREATER THAN HIGHEST STANDARD

5.00

PEAK HEIGHT (ABSORBANCE) 1.617 1.242 0.409
PEAK AREA (ABS-SECONDS) 1.157 0.919 0.233

READ: 9.64

(CONTINUED)

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 7AA
1.602 1.197
1.168 0.925

READ: 9.74

MEAN= 9.69 STD.DEV.=

***** COEF.VAR.= 0.93 %

9.69

***** E-50: FEADING GREATER THAN HIGHEST STANDARD

10.00 STANDARD 3

CD 0005

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA EG
1.114 0.900 0.217
0.690 0.565 0.125

READ: 4.96

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA EG
1.108 0.894 0.210
0.698 0.569 0.129

READ: 5.01

MEAN= 4.98 STD.DEV.=

***** COEF.VAR.= 0.78 %

CD 0006

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA EG
0.011 0.010 0.003
0.003 0.002 0.001

READ: -0.03

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA EG
0.008 0.006 0.003
0.002 0.003 0.001

READ: -0.02

MEAN= -0.02 STD.DEV.=

***** COEF.VAR.= 18.27 %

CD 0007

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA EG
0.008 0.007 0.003
0.002 0.002 0.001

READ: 0.00

PEAK AREA (ABS-SECONDS)

READ: -0.04

MEAN= -0.04 STD.DEV.=

CD 0008

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 5.43

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 5.32

MEAN= 5.37 STD.DEV.=

CD 0009

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 85.88

CD 0010

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 0.24

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 0.25

MEAN= 0.25 STD.DEV.=

CD 0011

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 7.64

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 7.35

MEAN= 7.49 STD.DEV.=

CD 0012

0.000

PB 6/10/90

0.001

COEF.VAR.= 35.30

AA 1.128
0.755
0.606

EG 0.248
0.140

(5.37)(200)(100)

107.4

AA 1.116
0.746
0.596

EG 0.248
0.140

PBS 1000

131.0

COEF.VAR.= 1.83

AA 1.611
2.337

EG 0.170
0.111

See chart

1.152
1.769

EG 0.170
0.111

06119-1c

AA 0.079
0.154

EG 0.069
0.111

AA 0.079
0.057

EG 0.068
0.140

-2c

COEF.VAR.= 1.64

AA 0.809
1.016

EG 0.142
0.241

AA 0.780
0.979

EG 0.135
0.224

-3c

COEF.VAR.= 3.52

READ: 0.19

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.068
0.127
ZAA 0.057
0.037
B 0.061
0.090

READ: 0.23

MEAN= 0.21 STD.DEV.=

COEF.VAR.= 14.82 %

CD 0013

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 1.530
1.162
ZAA 1.150
0.872
B 0.380
0.289

READ: 9.15

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 1.499
1.099
ZAA 1.151
0.848
B 0.360
0.251

READ: 8.75

MEAN= 8.95 STD.DEV.=

COEF.VAR.= 4.21 %

CD 0014

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.051
0.038
ZAA 0.042
0.022
B 0.010
0.017

READ: 0.12

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.045
0.025
ZAA 0.038
0.018
B 0.009
0.007

READ: 0.09

MEAN= 0.11 STD.DEV.=

COEF.VAR.= 20.20 %

CD 0015

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.466
0.389
ZAA 0.388
0.246
B 0.078
0.143

READ: 1.87

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.473
0.404
ZAA 0.394
0.250
B 0.073
0.139

READ: 1.30

PEAK HEIGHT (ABSORBANCE) 0.240 0.199 0.043
PEAK AREA (ABS-SECONDS) 0.183 0.120 0.061

READ: 0.85

PEAK HEIGHT (ABSORBANCE) AA 0.220 0.182 0.037
PEAK AREA (ABS-SECONDS) ZAA 0.146 0.110 0.035

READ: 0.78

MEAN= 0.81 STD.DEV.= 6.41 2

CD 0.017

PEAK HEIGHT (ABSORBANCE) AA 0.143 0.116 0.028
PEAK AREA (ABS-SECONDS) ZAA 0.093 0.067 0.017

READ: 0.45

PEAK HEIGHT (ABSORBANCE) AA 0.136 0.113 0.074
PEAK AREA (ABS-SECONDS) ZAA 0.094 0.066 0.039

READ: 0.44

MEAN= 0.44 STD.DEV.= 1.39 7

CD 0.013

PEAK HEIGHT (ABSORBANCE) AA 0.139 0.117 0.023
PEAK AREA (ABS-SECONDS) ZAA 0.085 0.064 0.021

READ: 0.42

PEAK HEIGHT (ABSORBANCE) AA 0.138 0.116 0.037
PEAK AREA (ABS-SECONDS) ZAA 0.097 0.064 0.034

READ: 0.42

MEAN= 0.42 STD.DEV.= 0.01 7

CD 0.013

PEAK HEIGHT (ABSORBANCE) AA 1.109 0.897 0.271
PEAK AREA (ABS-SECONDS) ZAA 0.746 0.609 0.149

READ: 5.46

PEAK HEIGHT (ABSORBANCE) AA 1.102 0.894 0.310
PEAK AREA (ABS-SECONDS) ZAA 0.737 0.602 0.136

READ: 5.30

MEAN= 5.42 STD.DEV.= 1.17 7

CD 0.013

CD 0020

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.018
0.014
ZAA 0.016
0.009
EG 0.004
0.005

READ: 0.03

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.015
0.011
ZAA 0.014
0.008
EG 0.004
0.003

READ: 0.01

MEAN= 0.02 STD.DEV.=

COEF.VAR.= 45.98

CD 0021

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 1.500
1.506
ZAA 1.174
1.174
EG 0.320
0.330

READ: 15.79

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 1.436
1.491
ZAA 1.145
1.162
EG 0.299
0.330

READ: 15.41

MEAN= 15.60 STD.DEV.=

COEF.VAR.= 2.54

15.60

E-50: READING GREATER THAN HIGHEST STANDARD

CD 0022

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.090
0.069
ZAA 0.075
0.049
EG 0.016
0.036

READ: 0.27

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.079
0.053
ZAA 0.065
0.039
EG 0.014
0.010

READ: 0.24

MEAN= 0.26 STD.DEV.=

COEF.VAR.= 9.55

CD 0023

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.431
0.299
ZAA 0.358
0.229
EG 0.075
0.071

READ: 1.72

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.444
0.286
ZAA 0.370
0.273
EG 0.074
0.063

CD 0024

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.37

AA
0.108
0.079

ZAA
0.091
0.056

EG
0.020
0.023

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.35

AA
0.110
0.072

ZAA
0.091
0.054

EG
0.020
0.018

MEAN= 0.36 STD. DEV. =

CD 0025

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.58

AA
0.166
0.116

ZAA
0.138
0.084

EG
0.020
0.022

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.55

AA
0.161
0.109

ZAA
0.135
0.091

EG
0.020
0.022

MEAN= 0.57 STD. DEV. =

CD 0026

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 4.49

AA
1.035
0.638

ZAA
0.855
0.522

EG
0.186
0.116

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 4.53

AA
1.045
0.650

ZAA
0.858
0.530

EG
0.186
0.116

MEAN= 4.54 STD. DEV. =

CD 0027

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 4.61

AA
1.049
0.648

ZAA
0.968
0.533

EG
0.180
0.115

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 4.71

AA
1.055
0.665

ZAA
0.967
0.532

EG
0.187
0.115

06220-23 (0.810)

COEF. VAR. = 3.08

-23 571

COEF. VAR. = 1.53

-23 571

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0.778
0.753

0.644
0.579

0.134
0.175

READ: 5.12

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.772
0.748

ZAA
0.640
0.577

EG
0.133
0.171

READ: 5.10

MEAN= 5.11 STD.DEV.=

COEF.VAR.= 0.27

CD 0029

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.474
0.431

ZAA
0.397
0.307

EG
0.179
0.121

READ: 2.40

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.475
0.430

ZAA
0.397
0.312

EG
0.179
0.121

READ: 2.44

MEAN= 2.42 STD.DEV.=

COEF.VAR.= 1.45

CD 0030

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.767
0.753

ZAA
0.635
0.586

EG
0.133
0.173

READ: 5.20

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.764
0.756

ZAA
0.633
0.585

EG
0.131
0.177

READ: 5.19

MEAN= 5.19 STD.DEV.=

COEF.VAR.= 0.22

CD 0031

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.010
0.013

ZAA
0.002
0.004

EG
0.005
0.009

READ: -0.01

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.008
0.012

ZAA
0.009
0.008

EG
0.001
0.006

ELEMENT: AS WAVELENGTH (NM): 193.7 SLIT (MM): 0.1
PYRO COATED TUBE WITH PLATFORM - MAX POWER HEATING - GAS STOP - 10.0000000000
PRETREAT TEMP: 1300 ATOMIZE TEMP: 2300 CHAPACT. BACK (MM) 1.00

- 1. TECHNIQUE: ZEEMAN
- 2. LAMP CURRENT (MA): 10.0
- 3. SIGNAL PROCESSING: PEAK AREA
- 4. CALIBRATION: LINEAR
- 5. TIME (SECONDS): 5.0
- 6. READ DELAY (SECONDS): 1.0
- 7. SCREEN FORMAT: 1.0 GRAPHICS
- 8. PRINTER: MAIN SUPPL
- 9. RECORDER SIGNAL: 0.2 CONT ABS
- 10. RECORD DEF EXP: 1.000
- 11. STATISTICS: 2 AVERAGE & CV
- 12. NOMINAL WEIGHT 1.00
- 13. ROLLOVER(ABS): 2.000
- 14. BG SCALE: 1.0

15. S1: 25.0 16. S2: 50.0
18. S4: 19. S5:
21. S7: 22. S8:

0615A
AS

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

PEAD: 0.005

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.009

MEAN= 0.007 STD.DEV.= COEF.VAR.= 41.95

0.000
***** AUTOZERO *****

AS

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.128

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.133

MEAN= 0.130 STD.DEV.=

***** STANDARD *****

AS

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.602
ZAA 0.371
0.304

AA 0.028
ZAA 0.024
0.005

AA 0.010
ZAA 0.010
0.006

AA 0.010
ZAA 0.010
0.006

06/11/94
Tech

READ: 1.5

MEAN= 1.0 STD. DEV. =

COEF. VAR. = 85.72

AS 0007

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 1.0

AA

0.031

0.025

ZAA

0.030

0.012

EC

0.018

0.012

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 1.2

AA

0.026

0.013

ZAA

0.026

0.013

EC

0.022

0.012

MEAN= 1.1 STD. DEV. =

COEF. VAR. = 15.61

AS 0008

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 56.3

AA

0.731

0.349

ZAA

0.563

0.295

EC

112.09

0.051

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 57.8

AA

0.839

0.151

ZAA

0.769

0.303

EC

0.091

0.047

MEAN= 57.1 STD. DEV. =

COEF. VAR. = 1.89

AS 0009

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 99.6

AA

1.938

0.922

ZAA

1.306

0.516

EC

0.664

0.101

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 29.5

AA

1.547

0.925

ZAA

1.201

0.464

EC

0.035

0.011

MEAN= 94.6 STD. DEV. =

COEF. VAR. = 7.25

AS 0010

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

See Julian - 274

EC

0.014

0.014

PEAK AREA (ABS-SECONDS)

0.309

0.274

READ:

51.2

MEAN=

51.2

STD.DEV.=

COEF.VAR.= 0.06

51.2

E-50: READING GREATER THAN HIGHEST STANDARD

50.2

STANDARD 2

AS

PEAK HEIGHT (ABSORBANCE)

AA

1.228

CAA

1.158

FA

0.709

PEAK AREA (ABS-SECONDS)

0.560

0.514

READ:

95.5

(CONTINUED)

PEAK HEIGHT (ABSORBANCE)

AA

1.307

CAA

1.241

FA

0.709

PEAK AREA (ABS-SECONDS)

0.557

0.509

READ:

94.3

MEAN=

94.9

STD.DEV.=

COEF.VAR.= 0.97

94.9

E-50: READING GREATER THAN HIGHEST STANDARD

98.7

STANDARD 3

AS

0005

PEAK HEIGHT (ABSORBANCE)

AA

0.667

CAA

0.629

FA

0.601

PEAK AREA (ABS-SECONDS)

0.282

0.250

READ:

47.5

PEAK HEIGHT (ABSORBANCE)

AA

0.674

CAA

0.631

FA

0.601

PEAK AREA (ABS-SECONDS)

0.308

0.271

READ:

51.7

MEAN=

49.6

STD.DEV.=

COEF.VAR.= 5.93

AS

0006

PEAK HEIGHT (ABSORBANCE)

AA

0.028

CAA

0.028

FA

0.001

PEAK AREA (ABS-SECONDS)

0.030

0.009

READ:

0.4

AS 0011

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA
2.913
1.313

ZAA
3.441
0.732

PG
0.811
0.701

READ: 141.9

E-87: VALUE GREATER THAN FOLLOVER ABSORBEANCE

AS 0012

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA
4.456
1.744

ZAA
3.030
0.597

PG
3.021
1.174

READ: 54.9

E-87: VALUE GREATER THAN FOLLOVER ABSORBEANCE

-4c

AS 0013

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA
2.918
1.430

ZAA
1.437
1.730

PG
1.890
1.100

READ: 53.4

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA
4.453
1.408

ZAA
3.908
0.278

PG
3.900
1.711

READ: 53.0

E-87: VALUE GREATER THAN FOLLOVER ABSORBEANCE

MEAN= 53.2 STD.DEV.=

COEF.VAR.= 0.50

AS 0014

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA
0.733
0.445

ZAA
0.240
0.122

PG
0.700
0.700

READ: 22.4

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA
0.633
0.454

ZAA
0.192
0.122

PG
0.600
0.182

READ: 22.5

MEAN= 22.4 STD.DEV.=

COEF.VAR.= 0.16

AS 0015

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA
4.464
1.527

ZAA
3.210
0.590

PG
1.400
0.14

READ: 112.3

E-87: VALUE GREATER THAN FOLLOVER ABSORBEANCE

AS 0016

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA
4.467
1.500

ZAA
-80
-80

PG
3.117
3.117

AS 0017

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
2.342
1.471
TAA
0.640
0.193

READ: 36.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
2.242
1.453
TAA
0.652
0.246

READ: 47.1

MEAN= 41.8 STD.DEV.=

COEF.VAR. = 14.0

AS 0018

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
5.456
3.81
TAA
0.554
0.135

READ: 123.0

E-37: VALUE GREATER THAN ROLLOVER ABSORPTANCE

AS 0019

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.646
0.291
TAA
0.611
0.261

READ: 49.7

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.692
0.294
TAA
0.650
0.252

READ: 49.8

MEAN= 49.8 STD.DEV.=

COEF.VAR. = 0.1

AS 0020

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.026
0.031
TAA
0.028
0.011

READ: 0.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.036
0.034
TAA
0.029
0.009

READ: 0.4

MEAN= 0.6 STD.DEV.=

COEF.VAR. = 46.2

AS 0021

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
4.456
1.637
TAA
3.077
0.733

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.106
0.626

READ: 15.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.196
0.677

READ: 15.6

MEAN= 15.5 STD. DEV. =

COEF. VAR. = 0.00

AS 0023

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.150
0.729

READ: 23.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.150
0.726

READ: 24.2

MEAN= 24.1 STD. DEV. =

COEF. VAR. = 0.90

AS 0024

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
5.441
2.010

READ: 52.4

E-07: VALUE GREATER THAN FOLLOVER ABSORBANCE

AS 0025

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
5.473
0.266

READ: 3.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.502
0.271

READ: 6.6

MEAN= 5.1 STD. DEV. =

COEF. VAR. = 42.65

AS 0026

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.551
0.189

READ: 7.1

PG
0.451
0.113

06220-12

READ: 6.6

MEAN= 6.8 STD. DEV. = 5.4
***** COEF. VAR. = 5.4

AS 0027

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.576
0.354

0.134
0.134

READ: 34.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.603
0.373

0.134
0.134

READ: 36.6

MEAN= 35.6 STD. DEV. =

COEF. VAR. = 3.94

AS 0028

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.591
0.357

0.134
0.134

READ: 34.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.600
0.360

0.134
0.134

READ: 35.7

MEAN= 34.9 STD. DEV. =

COEF. VAR. = 3.31

AS 0029

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.545
0.324

0.134
0.134

READ: 9.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.577
0.341

0.134
0.134

READ: 9.6

MEAN= 9.6 STD. DEV. =

COEF. VAR. = 3.19

AS 0030

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
4.401
1.110

0.134
0.134

06221-1b

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
4.463
1.551

EA
0.731
0.076

READ: 13.5

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

MEAN= 1.7 STD.DEV.=

COEF.VAR.= 99.99

AS 0031

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.013
0.575

EA
0.236
0.034

EA
0.034
0.001

READ: 15.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.126
0.645

EA
0.253
0.080

EA
0.077
0.023

READ: 14.3

MEAN= 14.7 STD.DEV.=

COEF.VAR.= 3.74

AS 0032

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.272
0.177

EA
0.050
0.024

EA
0.050
0.024

READ: 3.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.228
0.139

EA
0.061
0.035

EA
0.101
0.101

READ: 5.5

MEAN= 4.5 STD.DEV.=

COEF.VAR.= 33.87

AS 0033

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.631
0.293

EA
0.595
0.250

EA
0.037
0.030

READ: 48.7

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.656
0.289

EA
0.621
0.252

EA
0.040
0.035

READ: 47.9

MEAN= 48.3 STD.DEV.=

COEF.VAR.= 1.13

AS 0034

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.024
0.032

EA
0.022
0.005

EA
0.022
0.005

READ: 6.1

0.000 0.000

READ: 0.9

MEAN= -0.6 STD.DEV.=

COEF.VAP.= 59.017

AS 0035

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

FEAD: -0.4

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 1.3

MEAN= 0.4 STD.DEV.=

COEF.VAP.= 99.09

AS 0035

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 57.2

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 55.2

MEAN= 56.2 STD.DEV.=

COEF.VAP.= 1120

AS 0037

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 12.0

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 13.0

MEAN= 12.5 STD.DEV.=

COEF.VAP.= 5.50

AS 0038

PEAK HEIGHT (ABSORBANCE)

CB

6/13
PB

(56.2)(20)(180)

112.4
112.2
20X = 100.4

06378-7c (Rec'd)

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

READ: 56.1
MEAN= 56.1 STD.DEV.=
AS 0039

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

READ: 56.0

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

READ: 55.9
MEAN= 55.9 STD.DEV.=
AS 0040

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

READ: 49.1

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

READ: 50.1
MEAN= 49.6 STD.DEV.=
AS 0040

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.3

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

READ: -0.1

MEAN= 0.1 STD.DEV.=
AS 0041

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.996
0.617

ZAA 0.437
0.293

EG 0.507
0.323

AA 0.996
0.631

ZAA 0.419
0.293

EG 0.596
0.379

AA 1.069
0.629

ZAA 0.470
0.292

EG 0.590
0.397

AA 0.705
0.313

ZAA 0.527
0.259

EG 0.689
0.357

AA 0.028
-0.003

ZAA 0.030
0.003

EG 0.017
0.011

AA 0.016
0.005

ZAA 0.021
0.007

EG 0.019
0.007

AA 0.369
0.244

-7c spt
COEF, VAR. = 0.03

-7c spt
COEF, VAR. = 0.15

DMilled
COEF, VAR. = 1.35

Wrong cup
COEF, VAR. = 1.35

6/15/07
COEF, VAR. = 90.99

COEF, VAR. = 90.99

... 1068 (1972-07-01)

0.15

5

FEAD: 41.4

MEAN= 40.7 STD. DEV. =

COEF, VAP. =

000000

PEAK HEIGHT (ABSORPTANCE)	PEAK AREA (AREA-SECONDS)
0.00	0.00
0.01	0.01
0.02	0.02
0.03	0.03
0.04	0.04
0.05	0.05
0.06	0.06
0.07	0.07
0.08	0.08
0.09	0.09
0.10	0.10
0.11	0.11
0.12	0.12
0.13	0.13
0.14	0.14
0.15	0.15
0.16	0.16
0.17	0.17
0.18	0.18
0.19	0.19
0.20	0.20
0.21	0.21
0.22	0.22
0.23	0.23
0.24	0.24
0.25	0.25
0.26	0.26
0.27	0.27
0.28	0.28
0.29	0.29
0.30	0.30
0.31	0.31
0.32	0.32
0.33	0.33
0.34	0.34
0.35	0.35
0.36	0.36
0.37	0.37
0.38	0.38
0.39	0.39
0.40	0.40
0.41	0.41
0.42	0.42
0.43	0.43
0.44	0.44
0.45	0.45
0.46	0.46
0.47	0.47
0.48	0.48
0.49	0.49
0.50	0.50
0.51	0.51
0.52	0.52
0.53	0.53
0.54	0.54
0.55	0.55
0.56	0.56
0.57	0.57
0.58	0.58
0.59	0.59
0.60	0.60
0.61	0.61
0.62	0.62
0.63	0.63
0.64	0.64
0.65	0.65
0.66	0.66
0.67	0.67
0.68	0.68
0.69	0.69
0.70	0.70
0.71	0.71
0.72	0.72
0.73	0.73
0.74	0.74
0.75	0.75
0.76	0.76
0.77	0.77
0.78	0.78
0.79	0.79
0.80	0.80
0.81	0.81
0.82	0.82
0.83	0.83
0.84	0.84
0.85	0.85
0.86	0.86
0.87	0.87
0.88	0.88
0.89	0.89
0.90	0.90
0.91	0.91
0.92	0.92
0.93	0.93
0.94	0.94
0.95	0.95
0.96	0.96
0.97	0.97
0.98	0.98
0.99	0.99
1.00	1.00

REF AD: 7.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

FLAP: 44

```
MEAN=
5.9
STD.DEV.=
```

 $\text{COEF}, \text{'VAR'} = 35.61$ [illegible]

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0. 4. 4.

E-27: VALUE GREATER THAN FOLLOWER ACCEPTANCE

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

DEATH: 5, 6, 7

E-27: VALUE GREATER THAN FOLLOWUP ABSORPTION

MEAN= 51.4 STD. DEV. =

 $\text{COEFF. VAE} = 0.10$

710054

PEAK HEIGHT (ABSCISSANCE)
PEAK AREA (ABS-SECONDS)

EAL: 20.1

E-37: VALUE GREATER THAN ROLLOVER ARREARAGE

FAI HEIGHT (AERESPANCE)
FAK AREA (AES-SECONDS)

EAD: 53.03

E-27; VALUE GREATER THAN FOLLOWUP ABSORPTION

EAN= 3514 STD. DEV. =

COEF.VAR. = 63.57

5045

06488-1 (2000)
AA
11-11
11-11

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12

2.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.128
ZAA 0.081
EG 0.057
0.065

READ: 7.1

MEAN= 6.6 STD.DEV.=

COEF.VAR.= 10.61 %

AS 0046

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.356
ZAA 0.318
EG 0.048
0.064

READ: 43.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.351
ZAA 0.310
EG 0.047
0.060

READ: 43.6

MEAN= 43.4 STD.DEV.=

COEF.VAR.= 0.72 %

AS 0047

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.366
ZAA 0.338
EG 0.044
0.064

READ: 43.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.357
ZAA 0.328
EG 0.038
0.060

READ: 43.7

MEAN= 43.6 STD.DEV.=

COEF.VAR.= 0.5 %

AS 0045

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.411
ZAA 0.108
EG 0.154
0.055

READ: 11.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.405
ZAA 0.097
EG 0.334
0.065

READ: 11.3

MEAN= 11.3 STD.DEV.=

COEF.VAR.= 0.39 %

AS 0045

AS 0045

PEAK HEIGHT (ABSORBANCE)

AA 0.385

ZAA 0.385

EG 0.385

PEAD: 29.7

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.384
0.303

ZAA
0.254
0.164

EC
0.162
0.179

READ: 30.7

MEAN= 30.2 STD.DEV.=

COEF.VAR.= 2.24

AS 0050

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.447
0.331

ZAA
0.046
0.029

EC
0.409
0.39

READ: 4.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.446
0.350

ZAA
0.059
0.033

EC
0.411
0.317

READ: 5.0

MEAN= 4.6 STD.DEV.=

COEF.VAR.= 11.79

AS 0051

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.425
0.329

ZAA
0.113
0.063

EC
0.341
0.269

READ: 11.0

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.401
0.309

ZAA
0.094
0.064

EC
0.324
0.249

READ: 11.1

MEAN= 11.1 STD.DEV.=

COEF.VAR.= 0.88

AS 0052

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.383
0.299

ZAA
0.141
0.085

EC
0.299
0.211

READ: 15.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.407
0.298

ZAA
0.154
0.082

EC
0.299
0.216

READ: 14.7

MEAN= 15.0 STD.DEV.=

COEF.VAR.= 2.30

AS 0053

CLONE AREA (ABS-SECONDS) 0.347 0.090 0.240
READ: 17.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 17.6
MEAN= 17.7 STD.DEV.=
***** COEF.VAR.= 1.06
AS 0054

AA 0.453
0.355
-8c SX
ZAA 0.157
0.097
EG 0.326
0.750

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 21.0

AA 0.693
0.572
ZAA 0.106
0.114
EG 0.550
0.450

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 25.5
MEAN= 23.3 STD.DEV.=
***** COEF.VAR.= 13.67
AS 0055

AA 0.741
0.618
-10c SX
ZAA 0.198
0.137
EG 0.611
0.431

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 51.1

AA 0.754
0.351
ZAA 0.549
0.268
EG 0.109
0.000

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 50.8
MEAN= 50.9 STD.DEV.=
***** COEF.VAR.= 0.46
AS 0056

AA 0.683
0.310
C43
ZAA 0.643
0.266
EG 0.046
0.045

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: -0.9

AA 0.020
0.008
ZAA 0.018
0.002
EG 0.017
0.005

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 2.1
MEAN= 0.6 STD.DEV.=
***** COEF.VAR.= 99.99
AS 0057

AA 0.021
0.009
C43
ZAA 0.002
0.018
EG 0.008
-0.000

005

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.391
0.314
ZAA 0.253
0.164
EG 0.174
0.151

READ: 30.6

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.444
0.366
ZAA 0.252
0.177
EG 0.207
0.189

READ: 32.2

MEAN= 31.9 STD.DEV.=

COEF.VAR.= 5.72

AS 0058

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.542
0.401
ZAA 0.086
0.048
EG 0.497
0.354

READ: 9.1

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.580
0.382
ZAA 0.116
0.046
EG 0.463
0.337

READ: 7.6

MEAN= 7.8 STD.DEV.=

COEF.VAR.= 4.38

AS 0059

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.559
0.344
ZAA 0.066
0.015
EG 0.508
0.379

READ: 1.6

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.530
0.335
ZAA 0.015
0.028
EG 0.514
0.377

READ: 3.0

MEAN= 2.3 STD.DEV.=

COEF.VAR.= 44.17

AS 0060

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.549
0.357
ZAA 0.063
0.011
EG 0.497
0.379

READ: 6.4

PEAK HEIGHT (ABSORBEANCE)
PEAK AREA (ABS-SECONDS)

AA 0.563
0.359
ZAA 0.091
0.011
EG 0.479
0.379

READ: 6.6

MEAN= 6.5 STD.DEV.=

COEF.VAR.= 2.72

AS 0061

AS 0061

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 1.044
0.1667
ZAA 0.212
0.085
BG 0.850
0.503

READ: 15.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 1.072
0.1697
ZAA 0.182
0.083
BG 0.824
0.511

READ: 14.8

-3B SX

MEAN= 15.0 STD. DEV. =

COEF. VAR. = 1.79

AS 0062

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.674
0.299
ZAA 0.635
0.281
BG 0.617
0.301

READ: 49.8

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.644
0.294
ZAA 0.600
0.250
BG 0.641
0.332

READ: 48.0

MEAN= 49.3 STD. DEV. =

COEF. VAR. = 1.40

AS 0063

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.035
0.040
ZAA 0.025
0.003
BG 0.003
0.011

READ: -2.0

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.031
0.053
ZAA 0.022
0.011
BG 0.002
0.042

READ: 0.7

MEAN= -0.7 STD. DEV. =

COEF. VAR. = 99.99

CCBY

Opened

Method: ENVIRO94 Standard: STD1-Blank

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Avg	.0000	.0025	-.0011	.0000	.0000	.0330	.0000
SDev	.0000	.0000	.0003	.0000	.0000	.0001	.0000
%RSD	141.4	.5220	27.35	.0000	.9667	.2208	46.78

#1	.0000	.0025	-.0013	.0000	.0000	.0331	.0001
#2	.0000	.0025	-.0009	.0000	.0000	.0330	.0000

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2576
Avg	.0001	.0001	.0002	-.0000	-.0030	.0001	.0001
SDev	.0001	.0000	.0000	.0000	.0007	.0000	.0000
%RSD	71.43	27.35	16.67	141.4	22.56	71.43	966.7

#1	.0001	.0002	.0002	.0000	-.0025	.0000	.0001
#2	.0002	.0001	.0003	-.0001	-.0035	.0001	.0001

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Avg	.0014	-.0000	.0003	.0002	-.0016	-.0001	.0000
SDev	.0000	.0001	.0001	.0000	.0003	.0002	.0000
%RSD	2.926	234.0	19.40	11.84	19.92	265.0	141.4

#1	.0015	.0000	.0003	.0002	-.0018	-.0003	.0000
#2	.0014	-.0001	.0003	.0002	-.0014	.0001	.0000

Elem	Zn2138
Avg	.0007
SDev	.0000
%RSD	6.016

#1	.0007
#2	.0008

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	---	---	---	---	---	---
Wavlen	371.030	---	---	---	---	---	---
Avg	37890	---	---	---	---	---	---
SDev	366.2813	---	---	---	---	---	---
%RSD	.9666965	---	---	---	---	---	---
#1	38149	---	---	---	---	---	---
#2	37631	---	---	---	---	---	---

Method: ENVIRO94 Standard: STD8

Elem	Ag3280
Avg	.0790
SDev	.0002
%RSD	.2459

#1	.0791
#2	.0789

IntStd 1 2



Avg	1.040	.8952	.1606	.6641	.3704	.3218	.0610
SDev	.001	.0031	.0002	.0007	.0006	.0012	.0003
%RSD	.0594	.3463	.1429	.1092	.1597	.3656	.4079
#1	1.039	.8974	.1608	.6646	.3708	.3226	.0612
#2	1.040	.8930	.1604	.6636	.3700	.3209	.0668
Elem	Mn2576	Pb2203	Zn2138				
Avg	.7776	.0688	.3889				
SDev	.0022	.0006	.0011				
%RSD	.2759	.8126	.2855				
#1	.7791	.0692	.3897				
#2	.7761	.0684	.3882				
IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	37501	--	--	--	--	--	--
SDev	57.98276	--	--	--	--	--	--
%RSD	.1546166	--	--	--	--	--	--
#1	37460	--	--	--	--	--	--
#2	37542	--	--	--	--	--	--

Method: ENVIRO94 Standard: STD5

Elem	V_2924
Avg	.2899
SDev	.0003
%RSD	.1073
#1	.2902
#2	.2897

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	38110	--	--	--	--	--	--
SDev	9.192388	--	--	--	--	--	--
%RSD	.0241204	--	--	--	--	--	--
#1	38104	--	--	--	--	--	--
#2	38117	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: IGV
 Run Time: 06/14/94 11:25:27
 Comment:
 Mode: CONC Corr. Factor: 1
 Operator: DQ

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.805	9.718	9.865	10.02	10.08	9.758	9.647



SDev	.001	.037	.014	.00	.01	.011	.077
%RSD	.0449	.3800	.1399	.0333	.0779	.1123	.8004
#1	1.804	9.744	9.855	10.02	10.08	9.751	9.697
#2	1.805	9.692	9.875	10.02	10.09	9.766	9.588
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.566	9.643	10.15	9.622	47.96	9.765	9.706
SDev	.003	.004	.03	.007	.88	.035	.008
%RSD	.0334	.0458	.2598	.0722	1.827	.3576	.0778
#1	9.569	9.640	10.13	9.627	48.58	9.790	9.701
#2	9.564	9.646	10.17	9.617	47.34	9.740	9.711
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	50.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Ti1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.682	9.586	9.562	9.490	10.01	9.566	9.668
SDev	.030	.019	.022	.026	.03	.159	.003
%RSD	.3076	.1946	.2335	.2731	.2878	1.659	.0337
#1	9.703	9.599	9.546	9.471	9.987	9.679	9.670
#2	9.661	9.573	9.577	9.508	10.03	9.454	9.666
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Zn2138						
Units	ppm						
Avg	10.62						
SDev	.02						
%RSD	.1460						
#1	10.61						
#2	10.63						
Errors	QC Pass						
Value	10.00						
Range	10.00						
IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	36851	--	--	--	--	--	--
SDev	234.7594	--	--	--	--	--	--
%RSD	.6370505	--	--	--	--	--	--



Errors LC Pass
High .0100
Low -.0100

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	38498	--	--	--	--	--	--
SDev	101.8234	--	--	--	--	--	--
%RSD	.2644900	--	--	--	--	--	--
#1	38570	--	--	--	--	--	--
#2	38426	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: ICSAI

Run Time: 06/14/94 11:33:20

Comment:

Mode: CONC Corr. Factor: 1

Operator: DQ

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3119	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0048	507.6	3.543	.0218	.0009	471.5	-.0083
SDev	.0019	.1	.039	.0008	.0000	.3	.0048
%RSD	40.72	.0220	1.097	3.640	.5341	.0673	57.53
#1	-.0034	507.5	3.571	.0213	.0009	471.7	-.0049
#2	-.0062	507.7	3.516	.0224	.0009	471.3	-.0117
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		500.0				500.0	
Range		20.00				20.00	
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Hu2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0086	.0117	-.0038	179.1	-.4085	512.0	-.0382
SDev	.0006	.0007	.0020	.1	.2200	.5	.0011
%RSD	7.056	5.755	53.91	.0642	53.86	.0885	2.830
#1	.0082	.0113	-.0052	179.2	-.5641	511.7	-.0374
#2	.0090	.0122	-.0023	179.0	-.2529	512.3	-.0390
Errors	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass	NOCHECK
Value				200.0		500.0	
Range				20.00		20.00	
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3095	.0056	.0029	-.0356	.2202	.2317	-.0039
SDev	.0012	.0146	.0014	.0348	.0240	.0369	.0053
%RSD	.3850	260.1	47.21	97.82	10.91	15.92	137.5
#1	.3103	-.0047	.0019	-.0602	.2372	.2577	-.0076
#2	.3086	.0159	.0038	-.0110	.2032	.2056	.0001



Errors NOCHECK NOCHECK NOCHECK NOCHECK NOCHECK NOCHECK NOCHECK
Value
Range

Elem Zn2138
Units ppm
Avge -.0264
SDev .0019
%RSD 7.358

#1 -.0251
#2 -.0278

Errors NOCHECK
Value
Range

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	---	---	---	---	---	---
Wavlen	371.030	---	---	---	---	---	---
Avge	36986	---	---	---	---	---	---
SDev	101.1163	---	---	---	---	---	---
%RSD	.2733944	---	---	---	---	---	---
#1	37057	---	---	---	---	---	---
#2	36914	---	---	---	---	---	---

Method: ENVIR094 Sample Name: ICSABI

Run Time: 06/14/94 11:37:13

Comment:

Mode: CONC Corr. Factor: 1

Operator: DQ

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3119	Ca2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9383	504.1	3.575	.5257	.4737	471.8	.9320
SDev	.0029	.2	.026	.0037	.0009	.1	.0139
%RSD	.3098	.0311	.7202	.7093	.2005	.0181	1.492
#1	.9404	504.2	3.557	.5230	.4731	471.7	.9419
#2	.9362	504.0	3.594	.5283	.4744	471.8	.9222

Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1.000	500.0	500.0	500.0	500.0	500.0	1.000
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Elem	Co2286	Cr2677	Cu3247	Fe2599	K7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4495	.4730	.4826	177.9	-.3334	509.0	.4193
SDev	.0050	.0033	.0010	.1	.1447	.2	.0001
%RSD	1.110	.7030	.2036	.0742	43.41	.0310	.0289
#1	.4531	.4706	.4833	177.9	-.4358	508.9	.4192
#2	.4460	.4753	.4819	178.0	-.2311	509.2	.4193

Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	1.000	500.0	500.0	500.0	500.0	500.0	1.000
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00



Value	.5000	.5000	.5000	.5000	200.0	500.0	.5000
Range	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.3162	.8766	.9389	-.0313	.1466	.2746	.4617
SDev	.0015	.0169	.0141	.0408	.0477	.0415	.0043
%RSD	.4848	1.922	1.503	130.2	32.52	15.12	.9349
#1	.3151	.8647	.9488	-.0025	.1803	.2452	.4586
#2	.3173	.8885	.9289	-.0602	.1129	.3039	.4647
Errors	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value		1.000	1.000				.5000
Range		20.00	20.00				20.00

Elem	Zn2138
Units	ppm
Avg	.9033
SDev	.0031
%RSD	.3389

#1	.9011
#2	.9054

Errors	QC Pass
Value	1.000
Range	20.00

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030	--	--	--	--	--	--
Avg	36760	--	--	--	--	--	--
SDev	75.66042	--	--	--	--	--	--
%RSD	.2058199	--	--	--	--	--	--
#1	36707	--	--	--	--	--	--
#2	36814	--	--	--	--	--	--

Method: ENVIR094 Sample Name: PB 6/13 P3010L1 Operator: DQ
Run Time: 06/14/94 11:49:17
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0007	.0382	-.0337	-.0003	.0018	-.0064	.0002
SDev	.0000	.0303	.0001	.0004	.0000	.0053	.0074
%RSD	.0000	79.29	.3888	141.4	.1620	83.42	1516.
#1	-.0007	.0168	-.0338	-.0005	.0018	-.0026	-.0015
#2	-.0007	.0596	-.0336	.0000	.0018	-.0101	.0019
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0060	.0900	.2000	.0060	.0040	.0700	.0000



Low	-.0060	-.0900	-.2000	-.0060	-.0040	-.0700	-.0090
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Hn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0021	-.0007	.0026	.0029	-.0979	.0248	.0011
SDev	.0006	.0050	.0011	.0020	.3066	.0115	.0005
%RSD	26.90	729.0	40.93	67.76	313.3	46.52	44.11
#1	.0017	.0028	.0033	.0015	.1189	.0329	.0015
#2	.0025	-.0042	.0018	.0043	-.3147	.0166	.0004
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0200	.0100	.0300	2.000	.1000	.0020
Low	-.0100	-.0200	-.0100	-.0300	-2.000	-.1000	.0020
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0806	.0028	.0105	-.0438	.0287	-.0430	.0000
SDev	.0100	.0000	.0170	.0116	.0361	.0038	.0013
%RSD	12.43	.0000	161.8	26.59	125.8	8.807	616.7
#1	.0735	.0028	.0225	-.0520	.0032	-.0457	.0010
#2	.0877	.0028	-.0015	-.0355	.0542	-.0404	-.0009
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.2000	.0600	.1000	.1000	.2000	.2000	.0100
Low	-.2000	-.0600	-.1000	-.1000	-.2000	-.2000	-.0100
Elem	Zn2138						
Units	ppm						
Avg	.0025						
SDev	.0020						
%RSD	79.95						
#1	.0040						
#2	.0011						
Errors	LC Pass						
High	.0100						
Low	-.0100						

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	36786	--	--	--	--	--	--
SDev	40.30509	--	--	--	--	--	--
%RSD	.1095649	--	--	--	--	--	--
#1	36758	--	--	--	--	--	--
#2	36815	--	--	--	--	--	--

Method: ENVIR094 Sample Name: LCSW 1 Operator: DQ
Run Time: 06/14/94 11:53:11



Comment:

Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.914	2.049	1.950	2.096	2.042	1.930	1.942
SDev	.002	.036	.008	.000	.001	.001	.003
%RSD	.1052	1.773	.3911	.0208	.0302	.0595	.4040
#1	1.913	2.075	1.945	2.097	2.042	1.931	1.936
#2	1.916	2.023	1.955	2.096	2.043	1.929	1.947
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	2.400	2.400	2.400	2.400	2.400	2.400	2.400
Low	1.600	1.600	1.600	1.600	1.600	1.600	1.600
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.980	1.958	2.033	1.984	19.59	1.920	1.994
SDev	.000	.004	.001	.000	.24	.014	.005
%RSD	.0098	.2256	.0479	.0024	1.209	.7416	.2309
#1	1.980	1.961	2.033	1.984	19.42	1.931	1.994
#2	1.980	1.955	2.032	1.984	19.76	1.910	2.001
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	2.400	2.400	2.400	2.400	24.00	2.400	2.400
Low	1.600	1.600	1.600	1.600	16.00	1.600	1.600
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2974
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.114	2.002	1.945	2.025	2.084	1.930	1.987
SDev	.001	.005	.025	.021	.033	.048	.006
%RSD	.0481	.2441	1.283	1.025	1.585	2.485	.2901
#1	2.113	2.006	1.962	2.010	2.108	1.896	1.983
#2	2.115	1.999	1.927	2.040	2.061	1.964	1.994
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	2.400	2.400	2.400	2.400	2.400	2.400	2.400
Low	1.600	1.600	1.600	1.600	1.600	1.600	1.600
Elem	Zn2138						
Units	ppm						
Avg	1.949						
SDev	.004						
%RSD	.2102						
#1	1.946						
#2	1.952						
Errors	LC Pass						
High	2.400						
Low	1.600						

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED



SDev .0037
 %RSD 127.6

#1 .0003
 #2 .0056

Errors LC Pass
 High .0100
 Low -.0100

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	35058	--	--	--	--	--	--
SDev	1421.992	--	--	--	--	--	--
%RSD	4.056170	--	--	--	--	--	--
#1	36063	--	--	--	--	--	--
#2	34052	--	--	--	--	--	--

Method: ENVIR094 Sample Name: 6391-01C EX1 QC ONL1 Operator: DQ
 Run Time: 06/14/94 12:01:06
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2748
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0048	.2978	-.0021	1.910	.0032	24.85	-.0010
SDev	.0034	.0151	.0367	.011	.0001	.35	.0027
%RSD	70.32	5.074	1723.	.5622	1.684	1.411	88.93
#1	.0024	.3085	.0238	1.917	.0032	24.60	-.0011
#2	.0072	.2871	-.0280	1.902	.0033	25.10	-.0039
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2776
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0079	-.0014	.0164	1.588	3.014	5.070	1.467
SDev	.0012	.0010	.0016	.008	.276	.041	.013
%RSD	14.68	70.88	9.522	.4962	9.143	.8155	.8679
#1	.0088	-.0021	.0153	1.593	2.819	5.041	1.458
#2	.0071	-.0007	.0175	1.582	3.208	5.100	1.476
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2934
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	1365.	.0039	-.0081	-.0052	.0062	-.0395	.0000
SDev	4.	.0076	.0011	.0270	.0021	.0683	.0015
%RSD	.2992	194.2	13.45	519.9	33.99	172.8	.001
#1	1368.	-.0015	-.0088	-.0243	.0077	.0088	-.0010
#2	1362.	.0092	-.0073	.0139	.0047	-.0878	.0011
Elem	Zn2138						
Units	ppm						
Ave	.4626						



SDev .0077
%RSD 1.675

#1 .4571
#2 .4681

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	32485	--	--	--	--	--	--
SDev	429.9209	--	--	--	--	--	--
%RSD	1.323444	--	--	--	--	--	--
#1	32789	--	--	--	--	--	--
#2	32181	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6391-01C SPK1 Operator: DQ
Run Time: 06/14/94 12:04:59
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2254
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.9110	2.376	1.930	3.990	1.018	26.42	.9310
SDev	.0238	.054	.057	.051	.000	.94	.0359
%RSD	2.618	2.283	2.938	1.276	.0022	3.562	3.859
#1	.8941	2.338	1.890	4.026	1.018	25.75	.9056
#2	.9278	2.414	1.971	3.954	1.018	27.08	.9564

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.9491	.9480	1.022	2.526	15.55	6.174	2.445
SDev	.0320	.0329	.005	.001	1.00	.144	.043
%RSD	3.370	3.471	.4639	.0498	6.439	2.328	1.765
#1	.9265	.9247	1.025	2.527	14.84	6.072	2.417
#2	.9717	.9712	1.018	2.525	16.26	6.275	2.474

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	1351.	.9335	.9536	.9806	2.145	1.911	.9770
SDev	8.	.0356	.0833	.0099	.086	.014	.0147
%RSD	.6285	3.810	8.739	1.010	3.993	.7254	1.500
#1	1357.	.9083	.8947	.9876	2.084	1.901	.9666
#2	1345.	.9586	1.013	.9736	2.205	1.920	.9874

Elem	Zn2138
Units	ppm
Ave	1.415
SDev	.056
%RSD	3.986
#1	1.375



#2 1.455

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030						
Avgc	32252						
SDev	2179.303						
%RSD	6.757110						
#1	33793						
#2	30711						

Method: ENVIRO94 Sample Name: 6391-01C DSPK1 Operator: DU
 Run Time: 06/14/94 12:08:52
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Co2234
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avgc	.9156	2.426	2.038	3.980	1.030	26.61	.9470
SDev	.0062	.039	.023	.010	.001	.08	.0055
%RSD	.6735	1.616	1.148	.2577	.0882	.2900	.5789
#1	.9200	2.454	2.022	3.988	1.030	26.66	.9431
#2	.9113	2.399	2.055	3.973	1.029	26.55	.9509

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2700	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avgc	.9606	.9584	1.018	2.539	13.75	6.067	2.464
SDev	.0075	.0026	.003	.006	.47	.017	.001
%RSD	.7753	.2669	.2863	.2205	3.392	.2874	.0399
#1	.9659	.9602	1.020	2.543	14.08	6.079	2.465
#2	.9554	.9566	1.016	2.535	13.42	6.054	2.461

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avgc	1342.	.9719	.9457	.9860	2.157	1.928	.9903
SDev	2.	.0003	.0369	.0407	.072	.051	.0002
%RSD	.1632	.0300	3.899	4.132	3.326	2.663	.0221
#1	1344.	.9717	.9197	1.015	2.106	1.965	.9905
#2	1340.	.9721	.9718	.9572	2.208	1.892	.9902

Elem	Zn2138
Units	ppm
Avgc	1.425
SDev	.011
%RSD	.7914

#1	1.433
#2	1.417

IntStd	1	2	3	4	5	6	7
Mode							
Elem							
Wavlen							
Avgc							
SDev							
%RSD							
#1							
#2							



Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	NOTUSED
Wavlen	371.030	--	--	--	--	--
Ave	32254	--	--	--	--	--
SDev	647.0027	--	--	--	--	--
%RSD	2.005930	--	--	--	--	--
#1	31797	--	--	--	--	--
#2	32712	--	--	--	--	--

Method: ENVIR094 Sample Name: 6245-01C EX1 6/7 S1 Operator: DQ
Run Time: 06/14/94 12:12:46
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2254
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0002	.4268	-.0281	1.527	.0027	33.42	-.0010
SDev	.0055	.0521	.0132	.013	.0009	.97	.0056
%RSD	2242.	12.20	47.09	.8257	33.90	2.898	559.4
#1	-.0036	.3900	-.0187	1.536	.0020	32.74	-.0049
#2	.0041	.4636	-.0374	1.518	.0033	34.11	.0029

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Hu2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0189	.0026	.0717	1.646	11.58	4.711	1.201
SDev	.0051	.0011	.0011	.004	.90	.054	.015
%RSD	26.93	42.36	1.587	.2319	7.762	1.142	1.254
#1	.0153	.0018	.0709	1.648	10.94	4.673	1.190
#2	.0225	.0034	.0725	1.643	12.21	4.749	1.211

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	1312.	.0273	.0361	-.0186	.0253	-.0385	.0115
SDev	7.	.0147	.0444	.0473	.0165	.0058	.0007
%RSD	.5281	53.82	123.0	254.6	65.38	15.03	5.065
#1	1317.	.0169	.0047	-.0520	.0136	-.0426	.0110
#2	1307.	.0377	.0674	.0149	.0370	-.0344	.0120

Elem	Zn2138
Units	ppm
Ave	1.396
SDev	.035
%RSD	2.529

#1	1.371
#2	1.421

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--



Avg	32992	--	--	--
SDev	1803.122	--	--	--
%RSD	5.465332	--	--	--
#1	34267	--	--	--
#2	31717	--	--	--

Method: ENVIRO94 Sample Name: PB 6/13 P3050PI Operator: DQ
 Run Time: 06/14/94 12:16:40
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Units	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2299
Avg	ppm	-.0030	.0818	.0001	-.0009	.0027	-.0162	ppm
SDev	ppm	.0011	.0058	.0284	.0013	.0006	.0051	.0012
%RSD		37.94	7.117	48200.	141.4	24.30	31.35	.0053
#1		-.0022	.0777	-.0200	.0000	.0032	-.0126	460.7
#2		-.0038	.0859	.0201	-.0018	.0022	-.0198	.0026
Errors								-.0049
High	LC Pass	.0060	.0900	.2000	.0060	.0040	.0700	LC Pass
Low	LC Pass	-.0060	-.0900	-.2000	-.0060	-.0040	-.0700	.0080
Elem	Units	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Avg	ppm	-.0018	-.0014	.0021	.0133	-.8340	-.0118	ppm
SDev	ppm	.0019	.0040	.0003	.0013	.1675	.0582	.0000
%RSD		105.8	290.3	14.02	9.397	20.09	491.7	.0006
#1		-.0005	.0015	.0019	.0124	-.7156	.0293	1262.
#2		-.0032	-.0042	.0023	.0142	-.9525	-.0530	.0004
Errors								.0005
High	LC Pass	.0100	.0200	.0100	.0300	2.000	.1000	LC Pass
Low	LC Pass	-.0100	-.0200	-.0100	-.0300	-2.000	-.1000	.0020
Elem	Units	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Avg	ppm	.0865	-.0024	.0095	-.0102	.0233	-.0652	ppm
SDev	ppm	.0004	.0104	.0108	.0074	.0523	.0489	.0012
%RSD		.4691	427.9	113.0	72.53	223.9	74.98	.0040
#1		.0868	-.0098	.0171	-.0154	.0603	-.0998	247.3
#2		.0863	.0049	.0019	-.0049	-.0136	-.0306	.0009
Errors								.0014
High	LC Pass	.2000	.0600	.1000	.1000	.2000	.2000	LC Pass
Low	LC Pass	-.2000	-.0600	-.1000	-.1000	-.2000	-.2000	.0100
Elem	Units	Zn2138						
Avg	ppm							
SDev	ppm							
%RSD								



#1 .0055
#2 .0051

Errors LC Pass
High .0100
Low -.0100

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	32642	--	--	--	--	--	--
SDev	631.4464	--	--	--	--	--	--
%RSD	1.934489	--	--	--	--	--	--
#1	33088	--	--	--	--	--	--
#2	32195	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: PB-2 1 Operator: BQ
Run Time: 06/14/94 12:20:35
Comment:
Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2298
Units ppm ppm ppm ppm ppm ppm ppm
Avg .0026 H.1302 .0039 .0015 .0023 -.0250
SDev .0023 .0127 .0352 .0004 .0000 .0024 .0000
%RSD 89.01 9.731 901.3 27.97 .4518 9.675 1.350

#1 .0042 H.1392 .0288 .0018 .0023 -.0267 .0010
#2 .0009 H.1212 -.0210 .0012 .0023 -.0233 .0009

Errors LC Pass LC High LC Pass LC Pass LC Pass LC Pass
High .0060 .0900 .2000 .0060 .0040 .0700 .0050
Low -.0060 -.0900 -.2000 -.0060 -.0700 -.0050
Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Hg2790 Mn2776
Units ppm ppm ppm ppm ppm ppm ppm
Avg .0021 -.0002 .0027 .0187 -.2586 -.0015 .0006
SDev .0020 .0002 .0025 .0010 .3931 .0203 .0000
%RSD 96.56 138.2 92.72 5.590 152.0 1336. 1.989

#1 .0035 -.0004 .0009 .0194 .0194 -.0159 .0006
#2 .0007 -.0000 .0044 .0180 -.5365 .0128 .0006

Errors LC Pass LC Pass LC Pass LC Pass LC Pass LC Pass
High .0100 .0200 .0100 .0300 2.000 .1000 .0020
Low -.0100 -.0200 -.0100 -.0300 -.2.000 -.1000 .0020

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V_2924
Units ppm ppm ppm ppm ppm ppm ppm
Avg .1004 .0050 .0510 -.0037 .0245 -.0476 .0024
SDev .0081 .0156 .0127 .0135 .0183 .0397 .0015
%RSD 8.091 315.2 24.94 368.9 74.67 83.40 64.90



#1 .1062 .0160 .0600 .0059 .0116 .0195 .0035
 #2 .0947 -.0061 .0420 -.0132 .0374 -.0756 .0013

Errors LC Pass LC Pass LC Pass LC Pass LC Pass
 High .2000 .0600 .1000 .1000 .2000 .2000 .0100
 Low -.2000 -.0600 -.1000 -.1000 -.2000 -.2000 -.0100

Elem Zn2138
 Units ppm
 Ave .0071
 SDev .0010
 %RSD 14.18

#1 .0079
 #2 .0064

Errors LC Pass
 High .0100
 Low -.0100

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	31324	--	--	--	--	--	--
SDev	102.5305	--	--	--	--	--	--
%RSD	.3273277	--	--	--	--	--	--
#1	31396	--	--	--	--	--	--
#2	31251	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: LCSS#220 Operator: DQ
 Run Time: 06/14/94 12:24:35
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.4484	26.34	1.224	1.440	.8768	21.43	1.131
SDev	.0006	.03	.001	.001	.0003	.01	.004
%RSD	.1349	.1021	.0449	.0490	.0285	.0247	.3684
#1	.4488	26.32	1.224	1.441	.8766	21.43	1.128
#2	.4479	26.36	1.224	1.440	.8769	21.42	1.135
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.7940	61.90	1.660	2.050	1.380	34.00	1.830
Low	.2160	23.40	.5470	1.110	.6330	17.50	.6530
Elem	Co2286	Cr2677	Cu3247	Fe2599	K7664	Hg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.5200	1.688	1.329	65.35	17.77	18.61	2.381
SDev	.0013	.001	.000	.03	.85	.08	.005
%RSD	.2403	.0645	.0073	.0457	4.776	.4416	.1991
#1	.5191	1.689	1.329	65.37	18.37	18.55	2.374



#2 .5209 1.687 1.329 65.33 17.17 18.67 2.304

Errors LC Pass LC Pass LC Pass LC Pass LC Pass
 High .8310 2.610 2.030 146.0 30.70 31.40 3.850
 Low .3770 1.100 .8770 62.40 14.60 14.00 2.000

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V.20224
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave 7.078 .9528 1.946 .4860 1.024 1.257 1.770
 SDev .006 .0165 .005 .0222 .054 .023 .006
 %RSD .0818 1.734 .2809 4.562 5.265 1.857 34.50

#1 7.073 .9645 1.950 .4703 .9858 1.240 1.774
 #2 7.082 .9411 1.942 .5017 1.062 1.273 1.716

Errors LC Pass LC Pass LC Pass LC Pass LC Pass
 High 9.580 1.510 2.910 1.960 1.780 2.050 2.750
 Low 3.610 .6240 1.120 .2350 .6230 .6700 1.410

Elem Zn2138
 Units ppm
 Ave 2.330
 SDev .006
 %RSD .2760

#1 2.325
 #2 2.334

Errors LC Pass
 High 3.940
 Low 1.480

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	31808	--	--	--	--	--	--
SDev	116.6726	--	--	--	--	--	--
%RSD	.3668085	--	--	--	--	--	--
#1	31890	--	--	--	--	--	--
#2	31725	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: LCSS-2 #220 Operator: DQ
 Run Time: 06/14/94 12:28:31
 Comment:
 Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2268
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave .5430 39.58 1.568 1.652 1.052 25.66 1.341
 SDev .0053 .06 .027 .002 .001 .05 .018
 %RSD .9841 .1473 1.708 .1053 .1088 .1811 1.278

#1 .5467 39.62 1.587 1.653 1.053 25.69 1.369
 #2 .5392 39.54 1.549 1.651 1.051 25.63 1.395



Errors		LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High		.7940	61.90	1.660	2.050	1.380	34.00	1.840	1.840	1.840
Low		.2160	23.40	.5470	1.110	.6330	17.50	.6530		
Elem		Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	In2576		
Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm		
Avg		.6255	2.126	1.541	90.44	22.73	23.00	2.8994		
SDev		.0002	.005	.000	.17	.62	.17	.005		
%RSD		.0261	.2138	.0232	.1846	2.732	.7271	.1666		
#1		.6254	2.129	1.541	90.56	23.17	23.12	2.901		
#2		.6256	2.123	1.541	90.32	22.29	22.88	2.894		
Errors		LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High		.8310	2.610	2.030	146.0	30.70	31.40	3.850		
Low		.3770	1.100	.8770	62.40	14.60	14.00	2.000		
Elem		Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2024		
Units		ppm	ppm	ppm	ppm	ppm	ppm	ppm		
Avg		8.213	1.136	2.335	.5507	1.242	1.679	2.099		
SDev		.016	.059	.011	.0149	.071	.045	.004		
%RSD		.1902	5.196	.4625	2.698	5.755	2.658	.2131		
#1		8.224	1.094	2.343	.5612	1.191	1.711	2.102		
#2		8.202	1.177	2.327	.5401	1.293	1.648	2.096		
Errors		LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High		9.580	1.510	2.910	1.960	1.780	2.050	2.780		
Low		3.610	.6240	1.120	.2350	.6230	.6700	1.430		
Elem		Zn2138								
Units		ppm								
Avg		2.856								
SDev		.001								
%RSD		.0292								
#1		2.857								
#2		2.856								
Errors		LC Pass								
High		3.940								
Low		1.480								
IntStd	1	*Counts	2	3	4	5	6	7		
Mode		Y	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED		
Elem										
Wavlen		371.030								
Avg		31908								
SDev		279.3072								
%RSD		.8753378								
#1		32106								
#2		31711								



Method: ENVIRO94 Sample Name: 6354-03B1 Operator: DQ
 Run Time: 06/14/94 12:32:27
 Comment:
 Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3119 Cd2299
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave 85.82 .6444 1.053 154.7
 SDev .0087 .0001 .0018 .0007 .1
 %RSD .6140 .1706 .2765 5.911 .0915 1.757

#1 -.0088 85.72 .6431 1.056 .0109 154.6 .0030
 #2 -.0087 85.93 .6457 1.050 .0118 154.8 .0030

Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Mg2790 Mn2576
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave .0715 .1172 .1049 92.15 10.51 10.26 3.709
 SDev .0032 .0062 .0019 .06 .13 .00 .002
 %RSD 4.483 5.254 1.857 .0682 1.237 .0375 .0670

#1 .0738 .1215 .1062 92.10 10.42 10.26 3.707
 #2 .0692 .1128 .1035 92.19 10.60 10.26 3.710

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Ti1908 V_2224
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave 2.424 .1568 .2597 .0056 .0608 .0252 .3646
 SDev .022 .0239 .0299 .0677 .0014 .0402 .0037
 %RSD .8994 15.23 11.51 1218. 2.254 159.5 1.020

#1 2.408 .1399 .2386 -.0423 .0617 -.0536 .3620
 #2 2.439 .1736 .2808 .0534 .0598 .0032 .3672

Elem Zn2138
 Units ppm
 Ave .3210
 SDev .0025
 %RSD .7697

#1 .3228
 #2 .3193

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Waven	371.030	--	--	--	--	--	--
Ave	31457	--	--	--	--	--	--
SDev	209.3036	--	--	--	--	--	--
%RSD	.6653642	--	--	--	--	--	--
#1	31309	--	--	--	--	--	--
#2	31605	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6354-03B SPK1 Operator: DQ
 Run Time: 06/14/94 12:36:22
 Comment:



Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2298
Units ppm ppm ppm ppm ppm ppm ppm
Ave .8638 222.3 3.443 2.966 .9103 155.7 .9173
SDev .0019 .2 .124 .002 .0004 .4 .0064
%RSD .2242 .0743 3.589 .0755 .0444 .2322 .6977

#1 .8652 222.4 3.356 2.968 .9105 155.5 .9177
#2 .8624 222.2 3.530 2.964 .9100 156.0 .9219

Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Mg2790 Mn276
Units ppm ppm ppm ppm ppm ppm ppm
Ave .9860 1.150 1.012 157.2 28.37 25.93 4.966
SDev .0015 .002 .001 .2 .08 .06 .001
%RSD .1490 .1987 .0986 .1490 .2759 .2374 .0130

#1 .9849 1.148 1.011 157.0 28.43 25.89 4.967
#2 .9870 1.151 1.012 157.3 28.32 25.98 4.966

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Ti1908 V_2074
Units ppm ppm ppm ppm ppm ppm ppm
Ave 3.574 1.088 1.138 .5277 1.877 1.949 1.385
SDev .005 .010 .056 .0108 .012 .070 .001
%RSD .1431 .8741 4.895 2.046 .6145 3.610 .0814

#1 3.571 1.095 1.099 .5201 1.885 1.899 1.385
#2 3.578 1.081 1.178 .5354 1.869 1.999 1.384

Elem Zn2138
Units ppm
Ave 1.401
SDev .006
%RSD .4322

#1 1.405
#2 1.397

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	31609	--	--	--	--	--	--
SDev	219.2031	--	--	--	--	--	--
%RSD	.6934832	--	--	--	--	--	--
#1	31764	--	--	--	--	--	--
#2	31454	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6354-03B DSPKI Operator: Dq
Run Time: 06/14/94 12:40:16
Comment:

Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2298
Units ppm ppm ppm ppm ppm ppm ppm



Ave .8646 220.2 3.443 2.952 .9067 196.3 .9173
 SDev .0013 .4 .063 .004 .0013 1.1 .0043
 %RSD .1515 .1906 1.824 .1216 .1472 .5689 .4675

#1 .8655 219.9 3.398 2.950 .9058 197.1 .9203
 #2 .8637 220.5 3.487 2.955 .9076 195.6 .9141

Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Mg2790 Mn2576
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave .9774 1.154 1.006 151.4 28.59 25.62 4.813
 SDev .0052 .004 .002 .5 .52 .03 .014
 %RSD .5326 .3512 .1617 .3450 1.809 .1046 .3621

#1 .9810 1.157 1.005 151.7 28.22 25.63 4.850
 #2 .9737 1.151 1.008 151.0 28.95 25.60 4.876

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Ti1908 V_2924
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave 3.826 1.083 1.102 .4985 1.914 1.945 1.361
 SDev .025 .000 .005 .0502 .118 .064 .000
 %RSD .6586 .0175 .4287 10.07 6.175 3.266 .0356

#1 3.844 1.083 1.098 1.831 1.990 1.361
 #2 3.808 1.083 1.105 .4630 1.998 1.900 1.361

Elem Zn2138
 Units ppm
 Ave 1.403
 SDev .005
 %RSD .3281

#1 1.406
 #2 1.400

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	32486	--	--	--	--	--	--
SDev	628.6179	--	--	--	--	--	--
%RSD	1.935013	--	--	--	--	--	--
#1	32042	--	--	--	--	--	--
#2	32931	--	--	--	--	--	--

Method: ENVIR094 Sample Name: 6221-01D1 Operator: DQ
 Run Time: 06/14/94 12:44:10
 Comment:
 Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2289
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave -.0029 17.21 .0517 .6302 .0036 62.91 .0100
 SDev .0032 .05 .0038 .0004 .0007 .36 .0001
 %RSD 109.0 .2734 7.363 .0681 18.27 .5663 1.543



#1	-0.0052	17.17	.0544	.6299	.0041	62.66	.0099
#2	-0.0007	17.24	.0490	.6305	.0031	63.16	.0101
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0203	.0701	.1105	25.29	1.768	3.427	65.16
SDev	.0041	.0024	.0013	.07	.263	.014	.0009
%RSD	20.07	3.498	1.145	.2651	14.88	.4211	1.285
#1	.0174	.0683	.1096	25.24	1.582	3.437	.6522
#2	.0232	.0718	.1114	25.33	1.954	3.417	.6510
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.730	.0339	.5135	-.0294	.0764	-.0052	.0715
SDev	.008	.0091	.0126	.0190	.0384	.0050	.0008
%RSD	.2783	26.89	2.445	64.67	50.24	96.54	1.071
#1	2.724	.0275	.5046	-.0160	.1036	-.0087	.0710
#2	2.735	.0404	.5223	-.0428	.0493	-.0016	.0720
Elem	Zn2138						
Units	ppm						
Avg	2.352						
SDev	.022						
%RSD	.9165						
#1	2.337						
#2	2.368						
IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	33378	--	--	--	--	--	--
SDev	346.4823	--	--	--	--	--	--
%RSD	1.038056	--	--	--	--	--	--
#1	33623	--	--	--	--	--	--
#2	33133	--	--	--	--	--	--

Method: ENVIR094 Sample Name: 6221-02D1 Operator: DQ
Run Time: 06/14/94 12:48:04
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2738
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0088	106.3	.7271	.8834	.0079	174.3	.0078
SDev	.0010	.1	.0604	.0005	.0000	.5	.0026
%RSD	11.88	.1191	8.305	.0551	.0115	.2586	32.96
#1	-.0080	106.2	.7698	.8831	.0079	174.6	.0096
#2	-.0095	106.3	.6844	.8838	.0079	174.0	.0060
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2576



Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0231	.2638	.0928	54.28	8.797	8.572	1.018		
SDev	.0062	.0011	.0011	.02	.570	.026	.000		
%RSD	26.81	.4378	1.191	.0456	6.479	.2993	.0103		
#1	.0275	.2646	.0935	54.30	9.200	8.554	1.018		
#2	.0187	.2629	.0920	54.26	8.394	8.590	1.018		
Elem	Na5889	M12316	Pb2203	Sb2068	Se1960	Tl1908	V2024		
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm		
Ave	5.776	.1349	.3770	-.0299	.0949	.0406	.0222		
SDev	.006	.0129	.0180	.0062	.0450	.0158	.0014		
%RSD	.1064	9.526	4.774	20.84	47.42	38.96	1.955		
#1	5.771	.1258	.3643	-.0255	.1268	.0518	.0732		
#2	5.780	.1440	.3897	-.0343	.0631	.0294	.0712		
Elem	Zn2138								
Units	ppm								
Ave	1.842								
SDev	.004								
%RSD	.2196								
#1	1.845								
#2	1.839								

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	34328	--	--	--	--	--	--
SDev	3.535534	--	--	--	--	--	--
%RSD	.0102991	--	--	--	--	--	--
#1	34331	--	--	--	--	--	--
#2	34326	--	--	--	--	--	--

Method: ENVIR094 Sample Name: 6221-03D1 Operator: BQ
 Run Time: 06/14/94 12:51:57
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ag3280	ppm	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2248		
Ave	-.0097	36.67	.2737	1.392	.0031	116.3	.0576		
SDev	.0043	.08	.0609	.001	.0000	.2	.0051		
%RSD	44.01	.2162	22.26	.0479	.2475	.1630	8.821		
#1	-.0067	36.73	.3168	1.392	.0031	116.4	.0612		
#2	-.0127	36.61	.2306	1.393	.0031	116.1	.0540		
Elem	Co2286	Cr2677	Cu3247	Fe2599	K27664	Mg2790	Mn2576		
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm		
Ave	.0582	.5921	.2659	66.21	4.546	4.819	1.377		
SDev	.0011	.0025	.0006	.10	.707	.053	.003		
%RSD	1.959	.4248	.2293	.1440	15.55	1.091	1976		



#1	.0590	.5939	.2663	66.28	5.046	4.856	1.379
#2	.0574	.5903	.2655	66.15	4.046	4.782	1.376
Elem	Na5889	N12316	Pb2203	Sb2068	Se1960	Tl1908	V_2024
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.475	.3290	6.477	.0285	.0806	.0327	.0591
SDev	.016	.0165	.103	.0125	.0632	.0378	.0001
%RSD	.3633	5.026	1.593	43.81	78.42	115.5	.2250
#1	4.486	.3173	6.550	.0374	.1252	.0060	.0590
#2	4.463	.3407	6.404	.0197	.0359	.0595	.0592
Elem	Zn2138						
Units	ppm						
Avge	7.579						
SDev	.009						
%RSD	.1189						
#1	7.586						
#2	7.573						
IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	33848	--	--	--	--	--	--
SDev	65.05383	--	--	--	--	--	--
%RSD	.1921940	--	--	--	--	--	--
#1	33894	--	--	--	--	--	--
#2	33802	--	--	--	--	--	--

Method: ENVI094 Sample Name: 6221-04D1 Operator: DQ
Run Time: 06/14/94 12:55:50
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0014	5.438	.0549	.3642	.0017	11.13	.0102
SDev	.0011	.012	.0335	.0010	.0007	.02	.0001
%RSD	75.26	.2248	60.93	.2803	44.25	.1704	.9106
#1	-.0022	5.429	.0786	.3635	.0011	11.12	.0101
#2	-.0007	5.446	.0312	.3649	.0022	11.14	.0103
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0124	.3491	.0610	66.07	.2704	.7183	.5691
SDev	.0027	.0021	.0004	.08	.8949	.0566	.0024
%RSD	21.70	.6090	.7105	.1206	331.0	7.873	.4294
#1	.0105	.3476	.0607	66.01	-.3624	.6783	.5671
#2	.0143	.3506	.0613	66.12	.9032	.7583	.5704



Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V_2924
 Units ppm ppm ppm ppm ppm ppm
 Ave 3.052 .1584 2.217 .0078 .0070 .0206
 SDev .006 .0039 .008 .0069 .0211 .0357
 %RSD .1898 2.487 .3633 87.98 300.5 173.2
 #1 3.056 .1556 2.211 .0030 .0219 .0458
 #2 3.048 .1611 2.223 .0127 -.0079 -.0046

Elem Zn2138
 Units ppm
 Ave 1.490
 SDev .002
 %RSD .1200

#1 1.489
 #2 1.492

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030						
Ave	32932						
SDev	204.3539						
%RSD	.6205234						

#1 33077
 #2 32788

Method: ENVIR094 Sample Name: 6220-01D1 Operator: BQ
 Run Time: 06/14/94 12:59:43
 Comment:
 Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Re3130 Ca3179 Cd2198
 Units ppm ppm ppm ppm ppm ppm
 Ave -.0069 14.36 .0785 1.501 .0037 408.5 .0103
 SDev .0022 .04 .0106 .002 .0007 .7 .0001
 %RSD 31.61 .2803 13.48 .1509 19.84 .1657 .4721

#1 -.0084 14.33 .0859 1.502 .0032 409.0 .0107
 #2 -.0053 14.39 .0710 1.499 .0042 408.0 .0103

Elem Co2286 Cr2677 Fe2599 K_7664 Mg2790 Hn2776
 Units ppm ppm ppm ppm ppm ppm
 Ave .0115 .0387 .0711 20.01 .9378 11.80 .6070
 SDev .0001 .0046 .0049 .02 1.056 .07 .0008
 %RSD .4078 11.93 6.927 .0989 112.6 .5981 1402

#1 .0115 .0354 .0676 .2002 .1909 11.75 .6026
 #2 .0115 .0419 .0746 19.99 1.685 11.85 .6015

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V_2924
 Units ppm ppm ppm ppm ppm ppm
 Ave 17.07 .0292 .3490 -.0058 .1191 -.0503 .0491
 SDev .02 .0104 .0203 .0260 .0420 .0380 .0013



%RSD	.1012	35.57	5.819	446.4	35.24	75.52	2.694
#1	17.08	.0365	.3346	.0126	.0894	-.0771	.0500
#2	17.05	.0218	.3634	-.0242	.1488	-.0234	.0481
Elem	Zn2138						
Units	ppm						
Avg	1.245						
SDev	.001						
%RSD	.1161						
#1	1.246						
#2	1.244						
IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	32774	--	--	--	--	--	--
SDev	104.6518	--	--	--	--	--	--
%RSD	.3193135	--	--	--	--	--	--
#1	32848	--	--	--	--	--	--
#2	32700	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6220-02D1 Operator: BQ
Run Time: 06/14/94 13:03:36
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3119	Cd2298
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0038	8.364	.0771	.6210	.0043	14.37	.0047
SDev	.0000	.025	.0089	.0003	.0000	.02	.0027
%RSD	.0378	.2995	11.56	.0460	.0554	.1085	57.69
#1	-.0038	8.347	.0708	.6208	.0043	14.36	.0066
#2	-.0038	8.382	.0834	.6212	.0043	14.38	.0028
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0103	.0170	.0380	8.947	.2024	2.926	.5940
SDev	.0006	.0052	.0023	.009	.2092	.005	.0003
%RSD	6.323	30.69	6.162	.0955	103.4	.1776	.0446
#1	.0108	.0207	.0397	8.941	.3503	2.930	.5942
#2	.0099	.0133	.0363	8.953	.0544	2.923	.5934
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.776	.0049	.1346	.0043	.0143	.0065	.0486
SDev	.016	.0061	.0065	.0132	.0069	.0127	.0015
%RSD	.5855	123.3	4.812	311.0	48.16	196.4	3.063
#1	2.788	.0006	.1300	.0136	.0192	-.0025	.0496
#2	2.765	.0092	.1392	-.0051	.0094	.0155	.0475



Elem Zn2138
Units ppm
Avg .0782
SDev .0012
%RSD 1.508
#1 .0774
#2 .0791

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	32310	--	--	--	--	--	--
SDev	14.84924	--	--	--	--	--	--
%RSD	.0459594	--	--	--	--	--	--
#1	32320	--	--	--	--	--	--
#2	32299	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6220-02D SPKI Operator: DQ
Run Time: 06/14/94 13:07:30
Comment:
Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2799
Units ppm ppm ppm ppm ppm ppm ppm
Avg .8972 72.41 2.433 2.540 .9253 15.71 .9621
SDev .0065 .14 .104 .006 .0028 .13 .0031
%RSD .7290 .1907 4.274 .2309 .3073 .8090 .3191
#1 .8926 72.31 2.359 2.544 .9233 15.62 .9509
#2 .9018 72.51 2.506 2.536 .9273 15.80 .9643

Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Hg2790 Mn2576
Units ppm ppm ppm ppm ppm ppm ppm
Avg .9689 1.029 .9422 38.77 11.08 7.999 1.697
SDev .0029 .015 .0011 .22 .89 .124 .004
%RSD .3044 1.437 .1208 .5660 8.005 1.546 .2389
#1 .9668 1.019 .9414 38.62 10.45 7.911 1.694
#2 .9710 1.040 .9430 38.93 11.71 8.086 1.700

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V_2924
Units ppm ppm ppm ppm ppm ppm ppm
Avg 3.553 .9848 1.144 .6603 1.982 1.963 1.027
SDev .018 .0063 .022 .0120 .090 .076 .001
%RSD .4942 .6367 1.904 1.824 4.562 3.896 .1195
#1 3.541 .9804 1.128 .6518 1.918 2.017 1.026
#2 3.565 .9893 1.159 .6688 2.046 1.909 1.027

Elem Zn2138
Units ppm
Avg 1.097



SDev .007
%RSD .6529

#1 1.092
#2 1.102

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	33170	--	--	--	--	--	--
SDev	560.7357	--	--	--	--	--	--
%RSD	1.690465	--	--	--	--	--	--
#1	33567	--	--	--	--	--	--
#2	32774	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6220-02D DSPK1 Operator: DQ
Run Time: 06/14/94 13:11:23
Comment:
Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2298
Units ppm ppm ppm ppm ppm ppm ppm
Ave .8885 75.31 2.352 2.540 .9224 15.14 .9394
SDev .0094 .28 .018 .007 .0026 .10 .0153
%RSD 1.052 .3656 .7536 .2779 .2827 .6901 1.629

#1 .8819 75.12 2.365 2.545 .9206 15.06 .9286
#2 .8951 75.51 2.340 2.535 .9243 15.21 .9302

Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Mg2790 Hn2576
Units ppm ppm ppm ppm ppm ppm ppm
Ave .9541 1.025 .9354 39.91 10.22 8.065 1.629
SDev .0047 .004 .0016 .20 .51 .091 .011
%RSD .4944 .3649 .1701 .4983 5.002 1.130 .6582

#1 .9507 1.023 .9365 39.77 9.858 8.001 1.621
#2 .9574 1.028 .9343 40.05 10.58 8.130 1.636

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V_2024
Units ppm ppm ppm ppm ppm ppm ppm
Ave 3.335 .9637 1.083 .6372 1.910 1.845 1.029
SDev .004 .0138 .029 .0066 .007 .008 .003
%RSD .1325 1.436 2.723 1.043 .3426 .4147 .3341

#1 3.338 .9539 1.063 .6325 1.906 1.851 1.026
#2 3.332 .9735 1.104 .6419 1.915 1.840 1.011

Elem Zn2138
Units ppm
Ave 1.065
SDev .009
%RSD .8415

#1 1.059



#2 1.072

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	33182	--	--	--	--	--	--
SDev	630.7393	--	--	--	--	--	--
%RSD	1.900848	--	--	--	--	--	--
#1	33628	--	--	--	--	--	--
#2	32736	--	--	--	--	--	--

Method: ENVIR094 Sample Name: CCV1 Operator: DQ
 Run Time: 06/14/94 13:29:41
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Ca12798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	1.850	9.642	10.31	9.706	10.11	10.45	10.77
SDev	.000	.002	.18	.010	.02	.04	.07
%RSD	.0227	.0231	1.739	.1066	.2295	.4108	.7046
#1	1.849	9.644	10.44	9.699	10.13	10.48	10.32
#2	1.850	9.641	10.19	9.714	10.09	10.42	10.22

Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Hu2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	10.05	10.05	9.946	9.818	45.95	9.967	10.10
SDev	.03	.03	.025	.000	.60	.022	.02
%RSD	.2568	.3409	.2506	.0035	1.301	.2170	.1520
#1	10.07	10.08	9.929	9.817	46.37	9.952	10.12
#2	10.03	10.03	9.964	9.818	45.53	9.982	10.09

Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	50.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Ti1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	9.328	10.12	10.43	9.923	10.38	10.00	9.849
SDev	.066	.01	.01	.001	.02	.04	.017
%RSD	.7122	.1243	.1335	.0108	.1789	.3553	.1741
#1	9.281	10.13	10.42	9.922	10.37	9.977	9.861
#2	9.375	10.11	10.44	9.924	10.39	10.03	9.837

Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00



Elem Zn2138
Units ppm
Avge Q11.32
SDev .06
%RSD .5206

#1 Q11.36
#2 Q11.28

Errors QC Fail
Value 10.00
Range 10.00

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030						
Avge	32928						
SDev	239.7092						
%RSD	.7279909						
#1	33097						
#2	32758						

Method: ENVI094 Sample Name: CCBI
Run Time: 06/14/94 13:33:41 Operator: DQ
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2298
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0016	.0300	-.0053	.0003	.0011	.0086	.0024
SDev	.0011	.0107	.0049	.0004	.0000	.0049	.0001
%RSD	69.45	35.57	93.19	141.4	3.078	57.21	5.159
#1	.0008	.0225	-.0018	.0006	.0011	.0051	.0023
#2	.0023	.0376	-.0088	.0000	.0011	.0121	.0024
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0060	.0900	.2000	.0060	.0040	.0700	.0080
Low	-.0060	-.0900	-.2000	-.0060	-.0040	-.0700	-.0080
Elem	Co2286	Cr2677	Cu3247	Fe2599	K ₂ 7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0003	-.0005	.0007	.0023	-.2452	-.0068	.0014
SDev	.0024	.0027	.0009	.0032	.3084	.0250	.0005
%RSD	729.1	588.9	133.5	141.9	125.8	366.9	32.15
#1	.0021	.0015	.0013	.0045	-.0271	-.0245	.0014
#2	-.0014	-.0024	.0000	-.0000	-.4633	.0109	.0011
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0200	.0100	.0300	2.000	.1000	.0020
Low	-.0100	-.0200	-.0100	-.0300	-2.000	-.1000	-.0020



Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2074
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0617	.0069	.0185	-.0251	.0906	-.0565	.0011
SDev	.0152	.0029	.0286	.0131	.0030	.0149	.0078
XRSD	24.67	42.95	154.6	52.02	3.341	26.42	260.3
#1	.0725	.0048	.0387	-.0344	.0885	-.0671	.0011
#2	.0510	.0090	-.0017	-.0159	.0927	-.0660	.0009
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.2000	.0600	.1000	.1000	.2000	.2000	.0100
Low	-.2000	-.0600	-.1000	-.1000	-.2000	-.2000	-.0100

Elem	Zn2138
Units	ppm
Ave	.0052
SDev	.0018
XRSD	35.05

#1	.0039
#2	.0064

Errors	LC Pass
High	.0100
Low	-.0100

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	33963	--	--	--	--	--	--
SDev	576.9991	--	--	--	--	--	--
XRSD	1.698905	--	--	--	--	--	--
#1	34371	--	--	--	--	--	--
#2	33555	--	--	--	--	--	--

Method: ENVIR094 Standard: STD2

Elem	Ba4934	Ca3179	Cd2288	Co2286	Cu3247	K_2664	Pb2190
Ave	1.003	.9423	.1689	.6888	.3604	.3115	.0681
SDev	.001	.0035	.0001	.0012	.0004	.0013	.0002
XRSD	.1168	.3667	.0559	.1729	.1153	.4088	.2455
#1	1.002	.9447	.1690	.6896	.3607	.3124	.0680
#2	1.003	.9398	.1688	.6880	.3601	.3106	.0682
Elem	Mn2576	Pb2203	Zn2138				
Ave	.7979	.0734	.4094				
SDev	.0019	.0002	.0013				
XRSD	.2326	.3059	.3066				
#1	.7992	.0736	.4103				
#2	.7966	.0733	.4085				



IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030						
Avg	34158						
SDev	123.7437						
%RSD	.3622738						
#1	34070						
#2	34245						

Method: ENVIR094 Sample Name: CCV1
Run Time: 06/14/94 13:43:25 Operator: DQ
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2289
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.842	9.640	10.22	10.10	10.13	9.760	9.603
SDev	.001	.003	.02	.02	.00	.004	.021
%RSD	.0581	.0346	.2257	.1580	.0143	.0395	.2191
#1	1.842	9.642	10.23	10.09	10.13	9.763	9.618
#2	1.841	9.638	10.20	10.11	10.13	9.757	9.588
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	In2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.569	9.951	10.24	9.745	48.16	9.712	9.738
SDev	.006	.016	.00	.026	.01	.000	.006
%RSD	.0637	.1632	.0330	.2704	.0270	.0030	.0626
#1	9.565	9.962	10.24	9.763	48.17	9.712	9.742
#2	9.573	9.939	10.24	9.726	48.15	9.712	9.734
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	50.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2724
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.346	10.03	9.521	9.793	10.23	9.911	9.783
SDev	.037	.05	.004	.037	.01	.046	.007
%RSD	.4002	.5129	.0385	.3746	.1124	.4677	.0730
#1	9.319	10.07	9.523	9.819	10.23	9.878	9.794
#2	9.372	9.995	9.518	9.767	10.22	9.944	9.781
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Zn2138						



Units ppm
 Ave 10.61
 SDev .01
 XRS 1040

#1 10.61
 #2 10.60

Errors QC Pass
 Value 10.00
 Range 10.00

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	34146	--	--	--	--	--	--
SDev	214.2534	--	--	--	--	--	--
XRS	.6274533	--	--	--	--	--	--
#1	33995	--	--	--	--	--	--
#2	34298	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: CCBI

Run Time: 06/14/94 13:47:20

Comment:

Mode: CONC Corr. Factor: 1

Operator: DQ

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2299
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	-.0029	.0051	-.0106	-.0009	.0006	.0024	.0004
SDev	.0010	.0016	.0370	.0004	.0007	.0014	.0024
XRS	35.81	30.78	349.7	46.81	120.1	57.54	540.5
#1	-.0036	.0040	.0156	-.0011	.0010	.0014	.0021
#2	-.0021	.0063	-.0367	-.0006	.0001	.0034	-.0013
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0060	.0900	.2000	.0060	.0040	.0700	.0040
Low	-.0060	-.0900	-.2000	-.0060	-.0040	-.0700	-.0040
Elem	Co2286	Cr2677	Cu3247	Fe2599	K1664	Hg2790	Hu2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0020	-.0009	-.0004	.0029	-1.120	-.0367	.0002
SDev	.0012	.0002	.0023	.0001	.278	.0419	.0000
XRS	61.62	21.18	613.2	3.119	24.79	114.2	4.376
#1	.0011	-.0008	-.0020	.0030	-1.317	-.0663	.0002
#2	.0028	-.0010	.0013	.0028	-.9239	-.0071	.0003
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0200	.0100	.0300	2.000	.1000	.0020
Low	-.0100	-.0200	-.0100	-.0300	-2.000	-.1000	-.0020
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V2224
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm



Ave .0548 .0028 .0195 -.0083 -.0068 -.0046 -.0009
 SDev .0046 .0000 .0108 .0125 .0134 .0554 .0000
 %RSD 8.301 .0000 55.33 151.5 196.5 1200. .0003
 #1 .0580 .0028 .0271 -.0171 .0026 -.0438 -.0009
 #2 .0516 .0028 .0119 .0006 -.0162 .0346 .0009
 Errors LC Pass LC Pass LC Pass LC Pass LC Pass LC Pass
 High .2000 .0600 .1000 .1000 .2000 .2000 .0100
 Low -.2000 -.0600 -.1000 -.1000 -.2000 -.2000 -.0100

Elem Zn2138
 Units ppm
 Ave .0026
 SDev .0029
 %RSD 107.4

#1 .0047
 #2 .0006

Errors LC Pass
 High .0100
 Low -.0100

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	---	---	---	---	---	---
Wavlen	371.030	---	---	---	---	---	---
Ave	34656	---	---	---	---	---	---
SDev	129.4005	---	---	---	---	---	---
%RSD	.3733911	---	---	---	---	---	---
#1	34747	---	---	---	---	---	---
#2	34564	---	---	---	---	---	---

Method: ENVIRO94 Sample Name: 6417-01A 1 Operator: D0
 Run Time: 06/14/94 13:51:14

Comment:

Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2239
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	-.0974	3.637	2.781	.4887	.0029	13.05	.0163
SDev	.0027	.021	.068	.0001	.0007	.09	.0249
%RSD	2.814	.5845	2.454	.0232	24.21	.6821	148.6
#1	-.0993	3.652	2.829	.4888	.0024	13.11	.0346
#2	-.0955	3.622	2.732	.4886	.0034	12.99	.0009
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.9179	25.33	2.407	2863.	1.553	.1380	21.70
SDev	.0116	.11	.011	27.	.064	.0192	.11
%RSD	1.265	.4470	.4495	.9507	4.107	13.90	.5155
#1	.9261	25.41	2.400	2882.	1.508	.1244	21.79



#2	.9097	25.25	2.415	2843.	1.598	.1515	21.62
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.210	1.544	1.262	.2945	.2447	9.566	-.0526
SDev	.018	.001	.016	.0616	.0348	.391	.0136
%RSD	.5649	.0339	1.268	20.90	14.22	4.038	25.92
#1	3.223	1.544	1.250	.3380	.2693	9.289	-.0624
#2	3.197	1.544	1.273	.2510	.2201	9.842	-.0430
Elem	Zn2138						
Units	ppm						
Avg	64.42						
SDev	.54						
%RSD	.8406						
#1	64.80						
#2	64.03						

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	30636	--	--	--	--	--	--
SDev	497.8032	--	--	--	--	--	--
%RSD	1.624896	--	--	--	--	--	--
#1	30284	--	--	--	--	--	--
#2	30988	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6285-01A 1 Operator: BQ
 Run Time: 06/14/94 13:55:07
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2798
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0142	k21.79	.1372	49.66	.0044	k26.06	.3010
SDev	.0035	.62	.0251	.04	.0000	.26	.0009
%RSD	24.28	2.832	18.31	.0726	.6607	.9951	.3119
#1	-.0118	k21.36	.1550	49.69	.0044	k25.87	.3036
#2	-.0167	22.23	.1194	49.64	.0044	26.24	.3023
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0344	k7.968	35.81	k8.837	6.872	k6.124	.3399
SDev	.0011	.030	.04	.019	.782	.313	.0003
%RSD	3.159	.3823	.1151	.2190	11.37	5.119	.2254
#1	.0352	k7.946	35.78	k8.851	7.424	k6.346	.3394
#2	.0336	7.989	35.84	8.824	6.319	5.903	.3405
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm



Ave 8.732 .0823 k34.24 -1.378 k-.1540 k-.0073 k-.0168
 SDev .026 .0103 .03 .034 .0722 .0781 .0001
 %RSD .2932 12.58 .0875 2.487 46.90 1069. .4881
 #1 8.750 .0896 k34.21 -1.353 k-.2051 k-.0625 k-.0168
 #2 8.714 .0750 34.26 -1.402 -.1029 .0479 -.0169

Elem Zn2138
 Units ppm
 Ave S6842.
 SDev 7677.
 %RSD 112.2

#1 S12270.
 #2 1414.

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	31758	--	--	--	--	--	--
SDev	174.6554	--	--	--	--	--	--
%RSD	.5499485	--	--	--	--	--	--
#1	31882	--	--	--	--	--	--
#2	31635	--	--	--	--	--	--

Method: ENVIR094 Sample Name: 6119-OIC 1 Operator: DQ
 Run Time: 06/14/94 13:59:00
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2248
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	-.0041	k16.99	.1888	.6345	.0065	S5999.	.0115
SDev	.0049	.03	.0188	.0018	.0008	49.	.0059
%RSD	118.3	.1754	9.975	.2870	11.42	.9198	50.79
#1	-.0007	k17.02	.1755	.6358	.0060	S6033.	.0157
#2	-.0075	k16.97	.2022	.6332	.0071	S5964.	.0074
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0282	k.0554	.2684	k89.08	6.572	k228.8	4.307
SDev	.0038	.0001	.0004	.22	.929	.7	.003
%RSD	13.35	.1954	.1547	.2425	14.13	.3072	.0742
#1	.0308	k.0553	.2681	k89.23	7.229	k229.3	4.309
#2	.0255	k.0555	.2687	k88.93	5.916	k228.3	4.305
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	5.093	.1020	k.2711	-.0367	k1.313	k.1005	k.0545
SDev	.004	.0008	.0036	.0511	.115	.0411	.0022
%RSD	.0862	.7961	1.332	139.2	8.732	40.87	3.964



#1 5.097 .1026 k.2685 -.0728 k1.395 k.1296 k.0560
 #2 5.090 .1015 k.2737 -.0006 k1.232 k.0715 k.0529

Elem Zn2138
 Units ppm
 Ave k.8175
 SDev .0247
 %RSD 3.018

#1 k.8350
 #2 k.8001

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	29290	--	--	--	--	--	--
SDev	239.7092	--	--	--	--	--	--
%RSD	.8183855	--	--	--	--	--	--
#1	29121	--	--	--	--	--	--
#2	29460	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6119-02C 1 Operator: BQ
 Run Time: 06/14/94 14:02:54
 Comment:
 Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3119 Cd2198
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave -.0148 111.3 .9516 .6633 .0079 7.129 .0064
 SDev .0043 .2 .1103 .0001 .0006 .038 .0001
 %RSD 28.96 .1798 11.59 .0191 7.974 .5295 1.984

#1 -.0118 111.5 .8736 .6634 .0075 7.156 .0065
 #2 -.0179 111.2 1.030 .6632 .0084 7.102 .0063

Elem Co2286 Cr2677 Cu3247 Fe2599 Hg2790 In2576
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave .0941 .1094 .1529 209.8 4.428 8.913 1.280
 SDev .0008 .0013 .0007 .6 .641 .011 .003
 %RSD .8564 1.186 .4456 .2708 14.48 1.179 1.984

#1 .0935 .1085 .1524 210.2 4.882 8.905 1.282
 #2 .0946 .1103 .1533 209.4 3.975 8.920 1.279

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V2929
 Units ppm ppm ppm ppm ppm ppm ppm
 Ave 2.970 .1017 .1655 -.0190 .0333 .0893 .2154
 SDev .010 .0293 .0263 .0063 .0807 .0197 .0011
 %RSD .3238 28.84 15.91 33.02 242.1 22.03 .5116

#1 2.977 .0810 .1469 -.0235 .0904 .1032 .2162
 #2 2.963 .1224 .1841 -.0146 -.0237 .0754 .2146

Elem Zn2138



Units ppm
 Ave .3348
 SDev .0002
 %RSD .0494

#1 .3349
 #2 .3347

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030						
Ave	32137						
SDev	367.6955						
%RSD	1.144150						
#1	31877						
#2	32397						

Method: ENVIRO94 Sample Name: 6119-03C 1 Operator: DQ
 Run Time: 06/14/94 14:06:47
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2208
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	-.0032	k27.38	.2820	1.018	.0058	S5866.	.0052
SDev	.0012	.02	.0004	.004	.0000	11.	.0024
%RSD	37.13	.0751	.1281	.3693	.2122	.1837	54.00
#1	-.0024	k27.39	.2822	1.021	.0058	S5874.	.0072
#2	-.0041	k27.36	.2817	1.015	.0058	S5859.	.0032

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.0338	k.2586	.1970	k94.61	10.53	k184.1	5.051
SDev	.0040	.0016	.0009	.18	.26	.6	.011
%RSD	11.98	.6041	.4829	.1947	2.470	.3280	.2141
#1	.0309	k.2597	.1963	k94.48	10.35	k183.7	5.045
#2	.0366	k.2575	.1977	k94.74	10.72	k184.6	5.060

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2024
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	4.824	.0814	k.3729	.0441	k1.354	k-.1076	k.0722
SDev	.012	.0064	.0461	.0216	.061	.0110	.0063
%RSD	.2573	7.858	12.36	49.03	4.509	10.38	8.705
#1	4.833	.0769	k.4055	.0594	k1.397	k-.0979	k.0674
#2	4.815	.0859	k.3404	.0288	k1.310	k-.1134	k.0767

Elem	Zn2138
Units	ppm
Ave	k.7845
SDev	.0043
%RSD	.5488



#1 k.7815
#2 k.7876

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	29941	--	--	--	--	--	--
SDev	55.15433	--	--	--	--	--	--
%RSD	.1842100	--	--	--	--	--	--
#1	29902	--	--	--	--	--	--
#2	29980	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6119-04C 1 Operator: DQ

Run Time: 06/14/94 14:10:40

Comment:

Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2248
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0211	123.7	1.093	1.000	.0115	8.404	.0027
SDev	.0002	.3	.049	.003	.0001	.044	.0001
%RSD	.9149	.2523	4.526	.2794	1.017	.5243	2.603

#1

#2

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Hn2476
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0577	.1722	.1277	271.5	2.815	8.477	.6235
SDev	.0050	.0017	.0012	1.1	1.042	.064	.0001
%RSD	8.716	1.003	.9572	.4089	37.02	.7537	.0207

#1

#2

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.152	.1015	.1537	.0327	.0015	.1802	.2942
SDev	.014	.0040	.0150	.0406	.0166	.0225	.0001
%RSD	.4429	3.909	9.767	124.2	1105.	12.49	.0411

#1

#2

Elem	Zn2138						
Units	ppm						
Avge	.3034						
SDev	.0023						
%RSD	.7659						

#1

#2



IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Havlen	371.030	--	--	--	--	--	--
Avg	32250	--	--	--	--	--	--
SDev	304.7630	--	--	--	--	--	--
%RSD	.9450163	--	--	--	--	--	--
#1	32465	--	--	--	--	--	--
#2	32034	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6119-05C 1 Operator: BQ
Run Time: 06/14/94 14:14:34
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2238
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0231	88.58	.7986	.6881	.0073	17.01	.0080
SDev	.0011	.07	.0019	.0011	.0000	.03	.0025
%RSD	4.951	.0812	.2426	.1600	.2495	.1739	31.69
#1	-.0239	88.53	.7972	.6889	.0073	16.98	.0062
#2	-.0223	88.64	.7999	.6873	.0073	17.03	.0098
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Hu2176
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.1159	.1157	.2235	214.1	3.785	17.59	6.490
SDev	.0015	.0044	.0029	.1	.069	.01	.002
%RSD	1.312	3.823	1.291	.0314	1.831	.0596	.0107
#1	.1169	.1188	.2256	214.1	3.736	17.58	6.491
#2	.1148	.1126	.2215	214.2	3.834	17.60	6.484
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.776	.1741	.1625	-.0103	.0042	.1286	.1993
SDev	.028	.0415	.0422	.0065	.0782	.0513	.0005
%RSD	1.015	23.84	25.95	62.43	1854.	39.88	2452
#1	2.756	.1448	.1923	-.0149	.0595	.0923	.1997
#2	2.796	.2035	.1326	-.0058	-.0511	.1648	.1990
Elem	Zn2138						
Units	ppm						
Avg	.5688						
SDev	.0035						
%RSD	.6203						
#1	.5713						
#2	.5663						

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						



#2 32482 -- -- -- --

Method: ENVIRO94 Sample Name: 6119-08C 1 Operator: DQ

Run Time: 06/14/94 14:26:15

Comment:

Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2283
Units ppm ppm ppm ppm ppm ppm ppm
Avge -.0231 93.72 .7834 .6489 .0092 7.177 .0047
SDev .0003 .31 .1180 .0000 .0009 .016 .0025
%RSD 1.330 .3315 15.06 .0043 9.657 .2273 .54.02

#1 -.0233 93.50 .7000 .6488 .0098 7.189 .0029
#2 -.0229 93.94 .8668 .6489 .0085 7.166 .0064

Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Mg2790 Mn2576
Units ppm ppm ppm ppm ppm ppm ppm
Avge .1140 .1165 .2152 225.2 5.026 19.46 4.289
SDev .0049 .0018 .0058 .2 .797 .05 .001
%RSD 4.254 1.543 2.686 .0762 15.86 .2526 .0717

#1 .1174 .1177 .2111 225.3 4.463 19.42 4.291
#2 .1106 .1152 .2192 225.0 5.590 19.49 4.287

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V_2924
Units ppm ppm ppm ppm ppm ppm ppm
Avge 2.723 .1645 .1864 .0198 .0575 .1326 .2124
SDev .001 .0318 .0234 .0058 .0727 .0515 .0001
%RSD .0353 19.35 12.56 29.27 126.5 38.86 .0376

#1 2.723 .1420 .2030 .0157 .1089 .0961 .2125
#2 2.722 .1870 .1699 .0239 .0061 .1690 .2124

Elem Zn2138
Units ppm
Avge .5241
SDev .0080
%RSD 1.531

#1 .5298
#2 .5185

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	31638	--	--	--	--	--	--
SDev	433.4565	--	--	--	--	--	--
%RSD	1.370029	--	--	--	--	--	--

#1 31332
#2 31945



Method: ENVIRO94 Sample Name: CCV2
 Run Time: 06/14/94 14:39:55
 Comment:
 Mode: CONC Corr. Factor: 1

Operator: DQ

Elem	Ar3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2200
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.844	9.648	10.29	10.04	10.08	9.801	9.752
SDev	.005	.060	.09	.02	.01	.058	.020
%RSD	.2549	.6192	.8267	.1568	.1288	.5890	.2016
#1	1.841	9.606	10.35	10.05	10.07	9.760	9.739
#2	1.847	9.691	10.23	10.03	10.09	9.842	9.766

Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.643	10.01	10.19	9.809	47.46	9.829	9.821
SDev	.035	.05	.00	.035	.38	.022	.025
%RSD	.3614	.5047	.0050	.3610	.7937	.2240	.2580
#1	9.618	9.979	10.19	9.784	47.73	9.813	9.809
#2	9.667	10.05	10.19	9.834	47.20	9.844	9.845

Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	50.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.420	10.17	9.685	9.890	10.27	10.22	9.816
SDev	.001	.12	.047	.066	.07	.02	.024
%RSD	.0069	1.210	.4805	.6636	.6847	.2346	.2433
#1	9.420	10.09	9.652	9.843	10.22	10.20	9.799
#2	9.419	10.26	9.718	9.936	10.32	10.23	9.833

Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Elem	Zn2138
Units	ppm
Avg	10.69
SDev	.05
%RSD	.4977
#1	10.65
#2	10.73

Errors	QC Pass
Value	10.00
Range	10.00



IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	32552	--	--	--	--	--	--
SDev	451.8413	--	--	--	--	--	--
%RSD	1.388081	--	--	--	--	--	--
#1	32871	--	--	--	--	--	--
#2	32232	--	--	--	--	--	--

Method: ENVIR094 Sample Name: CCH2
Run Time: 06/14/94 14:43:50
Comment:
Mode: CONC Corr. Factor: 1

Operator: DQ

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2298
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0022	.0488	-.0446	.0000	.0011	-.0123	-.0007
SDev	.0000	.0102	.0269	.0000	.0000	.0037	.0025
%RSD	.5496	20.80	60.23	.0000	1.404	30.42	364.2

#1	-.0022	.0560	-.0636	.0000	.0011	-.0097	.0024
#2	-.0022	.0417	-.0256	.0000	.0011	-.0150	-.0011

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0060	.0900	.2000	.0060	.0040	.0700	.0080
Low	-.0060	-.0900	-.2000	-.0060	-.0040	-.0700	-.0080

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0000	-.0036	.0028	.0015	-.4421	.0023	.0019
SDev	.0031	.0010	.0013	.0022	.0927	.0253	.0011
%RSD	33530.	28.05	47.66	151.8	20.96	1097.	58.14

#1	-.0022	-.0043	.0018	.0030	-.3766	-.0156	.0011
#2	.0022	-.0029	.0037	-.0001	-.5077	.0202	-.0027

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0200	.0100	.0300	2.000	.1000	.0020
Low	-.0100	-.0200	-.0100	-.0300	-2.000	-.1000	-.0020

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Ti1908	V_2024
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0667	.0049	.0161	.0076	.0035	-.0086	.0012
SDev	.0037	.0030	.0008	.0199	.0723	.0206	.0029
%RSD	5.525	61.04	4.927	261.2	2094.	238.0	253.4

#1	.0693	.0028	.0156	-.0065	.0546	-.0232	.0032
#2	.0641	.0070	.0167	.0217	-.0477	.0039	-.0009

Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.2000	.0600	.1000	.1000	.2000	.2000	.0100
Low	-.2000	-.0600	-.1000	-.1000	-.2000	-.2000	-.0100

Elem Zn2138



Units ppm
 Ave .0060
 SDev .0014
 %RSD 23.03

#1 .0050
 #2 .0070

Errors LC Pass
 High .0100
 Low -.0100

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	33072	--	--	--	--	--	--
SDev	261.6295	--	--	--	--	--	--
%RSD	.7910907	--	--	--	--	--	--
#1	33257	--	--	--	--	--	--
#2	32887	--	--	--	--	--	--

Method: ENVIR094 Sample Name: 6119-09C 1 Operator: DQ
 Run Time: 06/14/94 14:47:44
 Comment:
 Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Cd2288
 Units ppm ppm ppm ppm ppm ppm
 Ave -.0205 83.52 .6512 .4855 .0078 11.22
 SDev .0023 .17 .0211 .0038 .0000 .05
 %RSD 11.16 .2057 3.242 .7920 .2767 .4633

#1 -.0221 83.40 .6661 .4882 .0078 11.18
 #2 -.0188 83.64 .6363 .4828 .0078 11.25

Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Mn2576
 Units ppm ppm ppm ppm ppm ppm
 Ave .0986 .1112 .2774 174.2 3.990 13.61
 SDev .0023 .0021 .0006 .4 .014 .12
 %RSD 2.291 1.866 .2006 .2458 .3617 .4042

#1 .0970 .1126 .2778 173.9 4.000 13.53
 #2 .1002 .1097 .2770 174.5 3.979 13.69

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V_2924
 Units ppm ppm ppm ppm ppm ppm
 Ave 2.985 .1245 .1566 .0072 -.0046 .1037
 SDev .030 .0003 .0120 .0559 .0067 .0037
 %RSD .9890 .2431 7.644 772.1 146.5 73.54

#1 2.964 .1243 .1650 -.0323 -.0094 .0498
 #2 3.006 .1247 .1481 .0468 .0002 .1577

Elem Zn2138



IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030	--	--	--	--	--	--
Avge	30717	--	--	--	--	--	--
SDev	76.36753	--	--	--	--	--	--
%RSD	.2486165	--	--	--	--	--	--
#1	30771	--	--	--	--	--	--
#2	30663	--	--	--	--	--	--

Elem	Units	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2298
	ppm		ppm	ppm	ppm	ppm	ppm	ppm
Avg		.0149	175.6	1.456	.9715	.0095	9.635	.0027
Sdev		.0000	.1	.020	.0032	.0000	.015	.0104
%RSD		.2457	.0350	1.358	.3298	.2812	.1554	.386.2
#1		-.0148	175.6	1.470	.9737	.0095	9.625	-.0047
#2		-.0149	175.5	1.443	.9692	.0095	9.646	.0101
Elem	Units	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
	ppm		ppm	ppm	ppm	ppm	ppm	ppm
Avg		.0687	.1751	.3490	292.2	5.042	12.98	.7592
Sdev		.0030	.0016	.0009	.4	.241	.04	.0014
%RSD		4.378	.9129	.2585	.1211	4.786	.3137	.1775
#1		.0709	.1740	.3484	291.9	4.871	12.95	.7601
#2		.0666	.1762	.3497	292.4	5.212	13.01	.7582
Elem	Units	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
	ppm		ppm	ppm	ppm	ppm	ppm	ppm
Avg		2.818	.1438	.1910	.0139	.0998	.1932	.3140
Sdev		.007	.0049	.0011	.0664	.0524	.0230	.0007
%RSD		.2486	3.428	.6010	478.9	52.48	11.88	.2152
#1		2.823	.1403	.1902	.0609	.0627	.2094	.3144
#2		2.813	.1473	.1918	-.0331	.1368	.1770	.3135
Elem	Units	Zn2138						
	ppm							
Avg		.5656						
Sdev		.0016						
%RSD		.2879						



#1 .5667
#2 .5644

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030						
Avg	32148						
SDev	82.73149						
%RSD	.2573417						
#1	32207						
#2	32090						

Method: ENVIRO94 Sample Name: 6119-11C 1 Operator: DQ
Run Time: 06/14/94 14:55:30

Comment:

Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2298
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0090	42.07	.4269	.9626	.0057	1424.	.0051
SDev	.0000	.01	.0306	.0033	.0000	7.	.0027
%RSD	.4935	.0123	7.165	.3392	.6150	.4820	53.21

#1	-.0091	42.08	.4053	.9603	.0058	1428.	.0032
#2	-.0090	42.07	.4485	.9649	.0057	1419.	.0070

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0546	.0743	.2444	190.2	9.050	215.6	8.795
SDev	.0071	.0019	.0052	.6	.846	.2	.029
%RSD	13.01	2.534	2.143	.3070	9.349	.1065	.3267

#1	.0596	.0757	.2481	190.6	9.649	215.8	8.815
#2	.0495	.0730	.2407	189.8	8.452	215.4	8.774

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.775	.1390	.2153	-.0420	.4046	.2233	.0994
SDev	.005	.0088	.0018	.0001	.0183	.0081	.0010
%RSD	.0947	6.345	.8267	.1272	4.528	3.609	1.053

#1	4.778	.1453	.2166	-.0419	.3916	.2290	.0985
#2	4.771	.1328	.2141	-.0420	.4176	.2176	.1000

Elem	Zn2138
Units	ppm
Avg	.5743
SDev	.0002
%RSD	.0357

#1	.5742
#2	.5745



IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avgc	30238	--	--	--	--	--	--
SDev	161.2203	--	--	--	--	--	--
%RSD	.5331714	--	--	--	--	--	--
#1	30124	--	--	--	--	--	--
#2	30352	--	--	--	--	--	--

Method: ENVIR094 Sample Name: 6119-12C I Operator: DQ
Run Time: 06/14/94 14:59:23
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2298
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avgc	-.0136	43.58	.3678	.5142	.0055	17.25	.0029
SDev	.0001	.10	.0741	.0001	.0000	.07	.0054
%RSD	.4050	.2313	20.16	.0112	.4943	.3892	186.2

#1	-.0136	43.50	.4202	.5143	.0055	17.21	.0009
#2	-.0136	43.65	.3154	.5142	.0055	17.30	.0067

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avgc	.0428	.0768	.1152	94.86	1.676	9.336	1.312
SDev	.0018	.0043	.0007	.22	.363	.026	.004
%RSD	4.138	5.615	.6240	.2311	21.63	.2789	.3055

#1	.0440	.0738	.1157	94.71	1.932	9.355	1.315
#2	.0415	.0799	.1147	95.02	1.419	9.318	1.302

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avgc	2.524	.0403	.1235	-.0037	.0549	.0355	.1202
SDev	.012	.0126	.0114	.0139	.0052	.0449	.0041
%RSD	.4587	31.36	9.215	377.0	9.396	126.5	3.439

#1	2.515	.0314	.1315	-.0135	.0586	.0037	.1232
#2	2.532	.0493	.1154	.0061	.0513	.0673	.1173

Elem	Zn2138
Units	ppm
Avgc	.2426
SDev	.0056
%RSD	2.317

#1	.2386
#2	.2465

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--



Method: ENVIRO94 Sample Name: 6119-13C I Operator: DQ

Run Time: 06/14/94 15:03:16

Comment:

Mode: CONC Corr. Factor: 1

Elem	Al3082	As1936	Ba4934	Be3130	Ca3179	Ca42348
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.03	.4162	.7460	.0076	33.94	.0028
SDev	.0001	.0289	.0004	.0000	.06	.0000
%RSD	.4011	6.931	.0574	.4663	.1761	1.104
#1	-.0168	.4366	.7463	.0076	33.98	.0020
#2	-.0167	.3958	.7457	.0076	33.90	.0020

Elem	Co2286	Cr2677	Cu3247	Fe2599	K _w 7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0869	.0784	.2452	117.1	3.029	10.42	8.242
SD	.0003	.0018	.0002	.1	.501	.03	.010
%RSD	.3183	2.240	.0813	0571	16.56	2703	1173

#1	.0867	.0797	.2451	117.1	3.383	10.40	8.249
#2	.0871	.0772	.2454	117.0	2.674	10.44	8.235
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	2.755	.1017	.1379	.0057	.0162	.0083	.1454
SDev	.039	.0214	.0234	.0002	.0460	.0719	.0006
XRSD	1.432	21.00	16.96	4.198	283.6	865.7	4434

#1	2.783	.0866	.1214	.0059	.0488	-.0592	.1450
#2	2.727	.1168	.1545	.0056	-.0163	.0426	.1450
Elem	Zn2138						
Units	ppm						
Avgc	.5023						
SDev	.0012						
RRSD	.2387						

	1	2	3	4	5	6	7
IntStd	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Mode	Y	--	--	--	--	--	--
Elem		--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avgc	31476	--	--	--	--	--	--
SDev	131.5219	--	--	--	--	--	--



%RSD .4178481 -- -- -- --
 #1 31383 -- -- -- --
 #2 31569 -- -- -- --

Method: ENVIRO94 Sample Name: 6119-14C 1 Operator: DQ
 Run Time: 06/14/94 15:07:10
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ar3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2299
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0179	146.3	1.246	.9526	.0100	9.063	.0027
SDev	.0022	.0	.020	.0023	.0007	.006	.0042
%RSD	12.49	.0051	1.599	.2395	7.192	.0675	195.8
#1	-.0163	146.3	1.260	.9543	.0105	9.059	.0010
#2	-.0195	146.3	1.232	.9510	.0095	9.068	.0063
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0575	.1752	.2225	325.9	3.115	11.73	.7416
SDev	.0007	.0006	.0022	.1	.637	.07	.0024
%RSD	1.237	.3235	.9670	.0392	20.45	.5801	.3162
#1	.0570	.1756	.2240	325.8	3.565	11.78	.7433
#2	.0581	.1748	.2210	326.0	2.665	11.68	.7400
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Ti1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.714	.1334	.2011	-.0566	.0453	.2367	.2987
SDev	.011	.0331	.0185	.0464	.0251	.0996	.0011
%RSD	.4047	24.85	9.179	81.85	55.42	42.09	.3703
#1	2.722	.1568	.1880	-.0894	.0631	.1662	.2995
#2	2.706	.1099	.2141	-.0239	.0276	.3071	.2979
Elem	Zn2138						
Units	ppm						
Avg	.4348						
SDev	.0026						
%RSD	.5941						
#1	.4367						
#2	.4330						

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	32334	--	--	--	--	--	--
SDev	41.01219	--	--	--	--	--	--
%RSD	.1268392	--	--	--	--	--	--
#1	32363	--	--	--	--	--	--



#2 32305 -- -- --

Method: ENVIRO94 Sample Name: LCSS PB X50 1 Operator: DQ
 Run Time: 06/14/94 15:11:03
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0001	.2801	-.0186	.0401	.0011	9.205	.0059
SDev	.0011	.0093	.0178	.0010	.0000	.011	.0050
%RSD	1263.	3.336	95.99	2.538	1.085	.1186	85.33
#1	-.0007	.2867	-.0060	.0408	.0011	9.197	.0023
#2	.0008	.2735	-.0311	.0394	.0011	9.213	.0095
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0194	.0422	.1416	1.090	-.1142	.4403	.0373
SDev	.0001	.0028	.0002	.002	.2812	.0090	.0003
%RSD	.7004	6.627	.1658	.1816	246.2	2.037	.7670
#1	.0193	.0403	.1418	1.092	.0846	.4340	.0375
#2	.0195	.0442	.1414	1.089	-.3130	.4467	.0371
Elem	Na5089	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2024
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.2988	-.0044	17.17	-.0204	.0176	-.0724	.0031
SDev	.0027	.0043	.01	.0066	.0385	.0210	.0029
%RSD	.8972	97.69	.0372	32.24	219.1	28.95	92.98
#1	.3007	-.0075	17.17	-.0250	-.0096	-.0576	.0051
#2	.2969	-.0014	17.18	-.0157	.0448	-.0872	.0011
Elem	Zn2138						
Units	ppm						
Avg	12.46						
SDev	.02						
%RSD	.1220						
#1	12.47						
#2	12.44						

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	33562	--	--	--	--	--	--
SDev	202.9397	--	--	--	--	--	--
%RSD	.6046619	--	--	--	--	--	--
#1	33706	--	--	--	--	--	--
#2	33419	--	--	--	--	--	--



Method: ENVIRO94 Sample Name: 6285-01A X10 Operator: DQ
 Run Time: 06/14/94 15:25:41
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3119	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0037	2.283	-.0059	4.938	.0011	2.849	.0160
SDev	.0000	.002	.0099	.001	.0000	.012	.0001
%RSD	.2811	.1090	167.7	.0204	.6197	.4319	.0014
#1	-.0037	2.285	.0011	4.937	.0011	2.857	.0161
#2	-.0037	2.281	-.0130	4.938	.0011	2.840	.0159

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2190	Hg2516
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0042	.8589	3.690	.9498	.1936	.6523	.0379
SDev	.0006	.0052	.001	.0053	.2308	.0085	.0004
%RSD	14.94	.6005	.0336	.5578	119.2	1.297	1.020

#1	.0047	.8625	3.689	.9535	.3568	.6583	.0376
#2	.0038	.8552	3.691	.9461	.0304	.6463	.0382

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.9275	.0049	3.887	-.1687	.0413	.0039	.0010
SDev	.0179	.0145	.008	.0250	.0571	.0692	.0000
%RSD	1.933	299.5	.2039	14.82	138.3	1797.	.0422

#1	.9402	.0151	3.892	-.1510	.0009	.0528	-.0010
#2	.9148	-.0054	3.881	-.1864	.0816	-.0451	-.0010

Elem	Zn2138
Units	ppm
Avg	375.4
SDev	1.5
%RSD	.4053

#1	376.4
#2	374.3

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	33711	--	--	--	--	--	--
SDev	115.9655	--	--	--	--	--	--
%RSD	.3439990	--	--	--	--	--	--
#1	33629	--	--	--	--	--	--
#2	33793	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6119-01C X10 Operator: DQ
 Run Time: 06/14/94 15:29:35



Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2288
Units ppm ppm ppm ppm ppm ppm ppm
Ave - .0022 1.677 -.0138 .0613 .0022 196.7 .0044
SDev .0022 .009 .0281 .0013 .0000 .4 .0026
%RSD 98.60 .5426 204.4 2.176 .0911 .1906 58.64
#1 -.0038 1.670 .0061 .0623 .0022 197.0 .0062
#2 -.0007 1.683 -.0337 .0604 .0022 196.4 .0026

Elem Co2286 Cr2677 Cu3247 Fe2599 K_7664 Mg2790 Mn2776
Units ppm ppm ppm ppm ppm ppm ppm
Ave .0031 .0069 .0266 9.801 -.1905 23.08 .4704
SDev .0013 .0001 .0024 .019 .1314 .03 .0019
%RSD 39.87 1.751 9.131 .1892 68.99 .1282 .3938

#1 .0023 .0070 .0283 9.814 -.2834 23.06 .4691
#2 .0040 .0068 .0249 9.788 -.0975 23.10 .4717

Elem Na5889 Ni2316 Pb2203 Sb2068 Se1960 Tl1908 V_2924
Units ppm ppm ppm ppm ppm ppm ppm
Ave .5149 -.0025 .0493 .0082 .0785 .0018 .0046
SDev .0150 .0015 .0001 .0065 .0202 .0337 .0000
%RSD 2.907 59.26 .1920 79.22 25.74 1903. .0569

#1 .5255 -.0015 .0494 .0036 .0928 -.0256 .0046
#2 .5043 -.0036 .0492 .0128 .0642 .0221 .0046

Elem Zn2138
Units ppm
Ave .0956
SDev .0032
%RSD 3.405

#1 .0979
#2 .0933

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	32698	--	--	--	--	--	--
SDev	21.21320	--	--	--	--	--	--
%RSD	.0648761	--	--	--	--	--	--
#1	32683	--	--	--	--	--	--
#2	32713	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: 6119-03C X10 1 Operator: DQ
Run Time: 06/14/94 15:33:28
Comment:

Mode: CONC Corr. Factor: 1

Elem Ag3280 Al3082 As1936 Ba4934 Be3130 Ca3179 Cd2288
Units ppm ppm ppm ppm ppm ppm ppm



Avg	- .0022	2.675	.0035	.1001	.0021	239.4	.0007
SDev	.0000	.003	.0108	.0000	.0001	.9	.0076
%RSD	1.168	.1170	309.0	.0219	2.372	.3934	.367.6
#1	- .0022	2.677	- .0041	.1001	.0021	238.7	- .0011
#2	- .0022	2.672	.0111	.1001	.0022	240.1	.0076
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Hu2716
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031	.0266	.0203	10.38	- .0175	18.74	.5489
SDev	.0013	.0010	.0017	.02	.6698	.09	.0019
%RSD	43.68	3.689	8.558	.1803	3829.	.4872	.3217
#1	.0021	.0273	.0191	10.36	- .4911	18.68	.5477
#2	.0040	.0259	.0216	10.39	.4562	18.81	.5502
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2724
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4884	.0321	.0595	.0031	.0944	- .0724	.0087
SDev	.0115	.0034	.0317	.0139	.0292	.0699	.0002
%RSD	2.346	10.76	53.19	454.3	30.90	96.66	2.001
#1	.4803	.0297	.0371	- .0068	.0738	- .1218	.0086
#2	.4965	.0345	.0819	.0129	.1150	- .0229	.0088
Elem	Zn2138						
Units	ppm						
Avg	.0906						
SDev	.0011						
%RSD	1.199						
#1	.0899						
#2	.0914						

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	33086	--	--	--	--	--	--
SDev	556.4930	--	--	--	--	--	--
%RSD	1.681934	--	--	--	--	--	--
#1	33480	--	--	--	--	--	--
#2	32693	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: CCV3 Operator: DQ
 Run Time: 06/14/94 15:41:50
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.845	9.651	10.34	10.04	10.06	9.828	9.830
SDev	.003	.027	.04	.01	.00	.023	.025
%RSD	.1509	.2802	.3873	.0700	.0182	.2311	.2537



#1	1.847	9.670	10.32	10.04	10.06	9.844	9.813
#2	1.843	9.632	10.37	10.03	10.06	9.812	9.844
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.641	10.02	10.18	9.787	47.65	9.790	9.831
SDev	.024	.01	.01	.001	.49	.056	.005
%RSD	.2456	.0734	.0889	.0118	1.032	.5702	.0518
#1	9.658	10.01	10.18	9.786	48.00	9.830	9.835
#2	9.625	10.02	10.19	9.788	47.30	9.751	9.828
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	50.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Na5889	Ni2316	Pb2203	Sh2068	Se1960	Ti1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.382	10.13	9.736	9.821	10.26	10.15	9.801
SDev	.009	.08	.003	.104	.06	.00	.007
%RSD	.0981	.7754	.0274	1.060	.5647	.0182	.0715
#1	9.389	10.18	9.734	9.895	10.22	10.15	9.796
#2	9.376	10.07	9.737	9.747	10.30	10.14	9.806
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Zn2138						
Units	ppm						
Avg	10.68						
SDev	.02						
%RSD	.2008						
#1	10.70						
#2	10.67						
Errors	QC Pass						
Value	10.00						
Range	10.00						
IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	32454	--	--	--	--	--	--
SDev	48.08326	--	--	--	--	--	--
%RSD	.1481582	--	--	--	--	--	--
#1	32488	--	--	--	--	--	--
#2	32420	--	--	--	--	--	--



Method: ENVIR094 Sample Name: CCB3 Operator: DQ

Run Time: 06/14/94 15:45:46

Comment:

Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2759
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0038	.0404	.0138	-.0015	.0012	-.0134	.0025
SDev	.0022	.0049	.0178	.0013	.0000	.0011	.0000
%RSD	58.27	12.05	128.6	85.05	.5550	8.116	8936
#1	-.0022	.0369	.0264	-.0006	.0012	-.0126	.0025
#2	-.0053	.0438	.0012	-.0024	.0012	-.0141	.0026
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0060	.0900	.2000	.0060	.0040	.0700	.0080
Low	-.0060	-.0900	-.2000	-.0060	-.0040	-.0700	-.0080
Elem	Co2286	Cr2677	Cu3247	Fe2599	K7664	Hg2790	Hn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.0009	.0008	-.0005	.0007	-1.274	-.0111	.0016
SDev	.0031	.0013	.0012	.0012	1.056	.0063	.0016
%RSD	365.7	174.1	229.5	162.9	82.85	56.97	103.4
#1	-.0031	.0017	.0003	.0016	-.5277	-.0066	H.0027
#2	.0014	-.0002	-.0013	-.0001	L-2.021	-.0156	.0004
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.0100	.0200	.0100	.0300	2.000	.1000	.0020
Low	-.0100	-.0200	-.0100	-.0300	-2.000	-.1000	-.0020
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Ti1908	V2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0504	.0007	-.0039	-.0243	.0151	-.0415	.0022
SDev	.0137	.0030	.0061	.0001	.0353	.0417	.0015
%RSD	27.17	447.3	157.8	.3591	234.1	100.6	66.07
#1	.0601	-.0014	-.0082	-.0243	-.0099	-.0709	.0033
#2	.0407	.0028	.0004	-.0242	.0401	-.0120	.0012
Errors	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass	LC Pass
High	.2000	.0600	.1000	.1000	.2000	.2000	.0100
Low	-.2000	-.0600	-.1000	-.1000	-.2000	-.2000	-.0100
Elem	Zn2138						
Units	ppm						
Avg	.0041						
SDev	.0022						
%RSD	54.36						
#1	.0025						
#2	.0057						
Errors	LC Pass						
High	.0100						

Low	-.0100						
IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y						
Wavlen	371.030	--	--	--	--	--	--
Avge	32798	--	--	--	--	--	--
SDev	103.2376	--	--	--	--	--	--
%RSD	.3147680	--	--	--	--	--	--
#1	32871	--	--	--	--	--	--
#2	32725	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: ICSAF Operator: DQ
Run Time: 06/14/94 15:49:41
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	-.0070	505.3	3.658	.0220	.0022	478.6	-.0065
SDev	.0000	.5	.068	.0014	.0000	.6	.0026
%RSD	.4144	.1083	1.867	6.433	.6401	.1301	39.80
#1	-.0069	504.9	3.609	.0210	.0022	478.2	-.0083
#2	-.0070	505.7	3.706	.0230	.0022	479.1	-.0047
Errors	NOCHECK	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK
Value		500.0				500.0	
Range		20.00				20.00	

Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mn2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0055	.0196	-.0019	185.2	-.6181	519.4	-.0381
SDev	.0007	.0018	.0037	.2	.4259	.4	.0007
%RSD	12.33	9.395	193.9	.1057	68.91	.0915	1.873
#1	.0050	.0183	-.0045	185.1	-.3169	519.1	-.0375
#2	.0060	.0209	.0007	185.4	-.9193	519.7	-.0356
Errors	NOCHECK	NOCHECK	NOCHECK	QC Pass	NOCHECK	QC Pass	NOCHECK
Value				200.0		500.0	
Range				20.00		20.00	

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.3568	-.0090	.0628	-.0471	.1548	.1033	-.0081
SDev	.0084	.0075	.0278	.0598	.0657	.0897	.0015
%RSD	2.358	83.54	44.31	126.9	42.43	86.89	19.04
#1	.3508	-.0144	.0825	-.0895	.1084	.1667	-.0021
#2	.3627	-.0037	.0431	-.0048	.2013	.0398	-.0070
Errors	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK	NOCHECK
Value							
Range							

Elem Zn2138
Units ppm
Avge -.0241
SDev .0022
%RSD 9.047

#1 -.0226
#2 -.0257

Errors NOCHECK
Value
Range

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avge	32218	--	--	--	--	--	--
SDev	147.7853	--	--	--	--	--	--
%RSD	.4586971	--	--	--	--	--	--
#1	32323	--	--	--	--	--	--
#2	32114	--	--	--	--	--	--

Method: ENVIRO94 Sample Name: ICSABF
Run Time: 06/14/94 15:53:35
Comment:
Mode: CONC Corr. Factor: 1

Operator: DQ

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2240
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.9630	502.7	3.720	.5264	.4738	.472.7	.9444
SDev	.0005	.1	.032	.0027	.0008	.5	.0034
%RSD	.0504	.0223	.8527	.5152	.1752	.1088	.3630
#1	.9634	502.8	3.697	.5283	.4733	.473.1	.9424
#2	.9627	502.6	3.742	.5245	.4744	.472.3	.9472
Errors	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass	QC Pass	QC Pass
Value	1.000	500.0		.5000	.5000	500.0	1.000
Range	20.00	20.00		20.00	20.00	20.00	20.00
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.4564	.4952	.4865	183.0	-.6564	513.8	.4261
SDev	.0016	.0050	.0019	.1	.4565	1.4	.0005
%RSD	.3600	1.000	.3823	.0396	69.55	.2780	.1263
#1	.4552	.4917	.4851	183.0	-.3336	514.8	.4257
#2	.4575	.4987	.4878	182.9	-.9792	512.8	.4265
Errors	QC Pass	QC Pass	QC Pass	QC Pass	NOCHECK	QC Pass	QC Pass
Value	.5000	.5000	.5000	200.0		500.0	.5000
Range	20.00	20.00	20.00	20.00		20.00	20.00

Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Tl1908	V_2924
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	.3582	.9533	.9873	-.0058	-.0290	.2372	.4703
SDev	.0006	.0224	.0332	.0259	.1029	.0882	.0016
%RSD	.1614	2.354	3.363	444.6	354.8	37.19	.3356
#1	.3578	.9374	.9639	.0125	.0438	.2996	.4691
#2	.3586	.9691	1.011	-.0241	-.1018	.1748	.4714
Errors	NOCHECK	QC Pass	QC Pass	NOCHECK	NOCHECK	NOCHECK	QC Pass
Value		1.000	1.000				.5000
Range		20.00	20.00				20.00

Elem	Zn2138
Units	ppm
Ave	.9092
SDev	.0017
%RSD	.1867

#1	.9104
#2	.9080

Errors	QC Pass
Value	1.000
Range	20.00

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Ave	32743	--	--	--	--	--	--
SDev	206.4752	--	--	--	--	--	--
%RSD	.6305934	--	--	--	--	--	--
#1	32889	--	--	--	--	--	--
#2	32597	--	--	--	--	--	--

Method: ENVIR094 Sample Name: CCV4
Run Time: 06/14/94 15:58:25
Comment:
Mode: CONC Corr. Factor: 1 Operator: DQ

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2238
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Ave	1.845	9.680	10.30	10.06	10.07	9.746	9.779
SDev	.003	.019	.06	.00	.00	.016	.062
%RSD	.1774	.1982	.5971	.0284	.0054	.3678	.6366
#1	1.843	9.666	10.26	10.07	10.07	9.721	9.678
#2	1.847	9.693	10.34	10.06	10.07	9.771	9.766
Errors	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass	QC Pass
Value	2.000	10.00	10.00	10.00	10.00	10.00	10.00
Range	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Mn2776

[illegible]

SDev	458.9123	--	--	--	--
%RSD	1.390833	--	--	--	--
#1	33320	--	--	--	--
#2	32671	--	--	--	--

PROGRAMMING MODE INSTRUMENT

USER METH # 34 - PB

DATE: 34/05/15

ELEMENT: PB WAVELENGTH (NM): 283.3 SLIT (UM): 0.7
 PYRO COATED TUBE WITH PLATFORM - MAX POWER HEATING - GAS STOP - Method: Mod.
 PRETREAT TEMP: 850 ATOMIZE TEMP: 1800 CHARACTER: MACH 12.0

1. TECHNIQUE: ZEEMAN
3. SIGNAL PROCESSING: PEAK AREA
5. TIME (SECONDS): 5.0
7. SCREEN FORMAT: 1.0 GRAPHICS
9. RECORDER SIGNAL: 0.2 CONT ABS
11. STATISTICS: 2 AVERAGE & CV
13. ROLLOVER(ABS): 1.500
2. LAMP CURRENT (MA): 10
4. CALIBRATION: AUTO SELECT
6. READ DELAY (SECONDS): 0.1
8. PRINTER: MATH SUPPL
10. RECORDER EXP: 1000
12. NOMINAL WEIGHT 1.0
14. EG SCALE: 1.0

15. S1: 25.0 16. S2: 50.0 17. S3: 100.0
 18. S4: 19. S5: 20. S6:
 21. S7: 22. S8: 23. RST: 56.0

0615A

TIME: 07:15

PB

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.015
 0.006
 ZAA
 0.014
 0.009
 F3
 0.004
 -0.003

READ: 0.009

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.047
 0.021
 ZAA
 0.039
 0.023
 B5
 0.009
 -0.001

READ: 0.023

MEAN= 0.016 STD.DEV.=

COEF.VAR.= 59.55 %

0.000 AUTOZERO

PB

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.328
 0.179
 ZAA
 0.261
 0.147
 B5
 0.087
 0.032

READ: 0.131

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.319
 0.177
 ZAA
 0.259
 0.143
 F5
 0.065
 0.034

READ: 0.127

MEAN= 0.129 STD.DEV.=

COEF.VAR.= 2.43 %

25.0 STANDARD

PB

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.532
 0.305
 ZAA
 0.414
 0.244
 B5
 0.117
 0.052

READ: 44.4

READ: 51.0
MEAN= 47.5 STD.DEV.= COEF.VAR.= 10.33 %

53

47.5 E-50: READING GREATER THAN HIGHEST STANDARD

50.0 STANDARD 2

PB

PEAK HEIGHT (ABSORBANCE) AA 0.876 BG 0.216
PEAK AREA (ABS-SECONDS) ZAA 0.661 0.421 0.119

READ: 88.9

(CONTINUED)

PEAK HEIGHT (ABSORBANCE) AA 0.880 BG 0.216
PEAK AREA (ABS-SECONDS) ZAA 0.665 0.410 0.116

53

READ: 87.6
MEAN= 88.2 STD.DEV.= COEF.VAR.= 1.18 %

88.2 E-50: READING GREATER THAN HIGHEST STANDARD

100.0 STANDARD 3

PB 0005

PEAK HEIGHT (ABSORBANCE) AA 0.519 BG 0.115
PEAK AREA (ABS-SECONDS) ZAA 0.406 0.237 0.061

READ: 44.4

PEAK HEIGHT (ABSORBANCE) AA 0.602 BG 0.134
PEAK AREA (ABS-SECONDS) ZAA 0.469 0.270 0.092

53

READ: 53.5
MEAN= 48.8 STD.DEV.= COEF.VAR.= 15.50 %

PB 0006

PEAK HEIGHT (ABSORBANCE) AA 0.022 BG 0.004
PEAK AREA (ABS-SECONDS) ZAA 0.020 0.014 0.005

READ: -0.4

PEAK HEIGHT (ABSORBANCE) AA 0.000 BG 0.000
PEAK AREA (ABS-SECONDS) ZAA 0.000 0.000 0.000

MEAN= -0.5 STD.DEV.= COEF.VAR.= 27.83 %

 PB 0007
 PEAK HEIGHT (ABSORBANCE) AA ZAA
 PEAK AREA (ABS-SECONDS) 0.019 0.015 0.006
 0.012 0.010 1.002
 READ: -1.1

PEAK HEIGHT (ABSORBANCE) AA ZAA
 PEAK AREA (ABS-SECONDS) 0.017 0.014 0.004
 0.010 0.009 0.001
 READ: -1.2
 MEAN= -1.2 STD.DEV.= COEF.VAR.= 5.80 %

 PB 0008

PEAK HEIGHT (ABSORBANCE) AA ZAA
 PEAK AREA (ABS-SECONDS) 0.424 0.336 0.088
 0.244 0.200 0.015
 READ: 36.3
 PEAK HEIGHT (ABSORBANCE) AA ZAA
 PEAK AREA (ABS-SECONDS) 0.426 0.337 0.089
 0.241 0.195 0.049
 READ: 35.2

MEAN= 35.7 STD.DEV.= COEF.VAR.= 7.27 %

 PB 0009
 PEAK HEIGHT (ABSORBANCE) AA ZAA
 PEAK AREA (ABS-SECONDS) 0.036 0.031 0.006
 0.022 0.017 0.005
 READ: 0.3

PEAK HEIGHT (ABSORBANCE) AA ZAA
 PEAK AREA (ABS-SECONDS) 0.038 0.032 0.009
 0.026 0.019 0.003
 READ: 0.6
 MEAN= 0.4 STD.DEV.= COEF.VAR.= 50.75 %

PB 0010
 PEAK HEIGHT (ABSORBANCE) AA ZAA
 PEAK AREA (ABS-SECONDS) 0.074 0.062 0.012
 0.042 0.023 0.009

06484-5c

06488-4c

PEAK AREA (ABS-SECONDS) 0.043 0.012 0.010
READ: 3.2

MEAN= 3.2 STD.DEV.= COEF.VAR.= 1.40 %
PB 0011

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.349 0.280 0.069
0.200 0.158 0.041

READ: 27.7

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.345 0.277 0.065
0.199 0.157 0.040

READ: 27.4
MEAN= 27.6 STD.DEV.= COEF.VAR.= 0.75 %
PB 0012

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.346 0.277 0.069
0.199 0.157 0.042

READ: 27.3

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.342 0.276 0.067
0.200 0.154 0.046

READ: 26.7
MEAN= 27.0 STD.DEV.= COEF.VAR.= 1.60 %
PB 0013

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.170 0.138 0.047
0.127 0.080 0.047

READ: 12.3

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.166 0.136 0.039
0.117 0.077 0.041

READ: 11.5

MEAN= 11.9 STD.DEV.= COEF.VAR.= 4.39 %
PB 0014

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.345 0.277 0.065
0.199 0.157 0.040

READ: 27.4

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.346 0.277 0.069
0.199 0.157 0.042

READ: 27.3

PEAK HEIGHT (ABSORBANCE) AA PG
PEAK AREA (ABS-SECONDS) 0.342 0.276 0.067
0.200 0.154 0.046

-4c spk

-4c 18ug spk

06431-1c

PEAK HEIGHT (ABSORBANCE) AA 0.181 ZAA 0.147 E5 0.035
PEAK AREA (ABS-SECONDS) 0.122 0.083 0.049

READ: 12.8

MEAN= 13.0 STD.DEV.= COEF.VAR.= 1.49 %

PB 0015

PEAK HEIGHT (ABSORBANCE) AA 0.864 ZAA 0.655 E5 0.216
PEAK AREA (ABS-SECONDS) 0.623 0.405 0.210

READ: 93.6

PEAK HEIGHT (ABSORBANCE) AA 0.900 ZAA 0.676 E5 0.227
PEAK AREA (ABS-SECONDS) 0.536 0.419 0.217

READ: 100.1

MEAN= 36.7 STD.DEV.= COEF.VAR.= 8.25 %

PB 0016

PEAK HEIGHT (ABSORBANCE) AA 0.216 ZAA 0.171 E5 0.045
PEAK AREA (ABS-SECONDS) 0.161 0.111 0.051

READ: 18.2

PEAK HEIGHT (ABSORBANCE) AA 0.210 ZAA 0.167 E5 0.043
PEAK AREA (ABS-SECONDS) 0.153 0.104 0.049

READ: 16.9

MEAN= 17.5 STD.DEV.= COEF.VAR.= 5.30 %

PB 0017

PEAK HEIGHT (ABSORBANCE) AA 0.147 ZAA 0.116 E5 0.032
PEAK AREA (ABS-SECONDS) 0.118 0.078 0.040

READ: 11.8

PEAK HEIGHT (ABSORBANCE) AA 0.147 ZAA 0.117 E5 0.030
PEAK AREA (ABS-SECONDS) 0.103 0.075 0.027

READ: 11.4

MEAN= 11.5 STD.DEV.= COEF.VAR.= 2.54 %

PEAK AREA (ABS-SECONDS) 0.021 0.013 0.007

READ: -0.5

PEAK HEIGHT (ABSORBANCE) 0.026 0.021 0.005

PEAK AREA (ABS-SECONDS) 0.015 0.013 0.002

READ: -0.5

MEAN= -0.5 STD.DEV.= COEF.VAR.= 0.18 %

FB 0019

PEAK HEIGHT (ABSORBANCE) 1.922 1.278 0.587

PEAK AREA (ABS-SECONDS) 1.531 1.008 0.521

READ: 148.3

PEAK HEIGHT (ABSORBANCE) 2.005 1.305 0.700

PEAK AREA (ABS-SECONDS) 1.506 1.046 0.560

READ: 155.6

MEAN= 152.0 STD.DEV.= COEF.VAR.= 2.71 %

FB 0020

E-51: ABSORBANCE BEYOND CALIBRATION FUNCTION

PEAK HEIGHT (ABSORBANCE) 0.131 0.106 0.026

PEAK AREA (ABS-SECONDS) 0.070 0.057 0.013

READ: 7.7

PEAK HEIGHT (ABSORBANCE) 0.122 0.097 0.020

PEAK AREA (ABS-SECONDS) 0.066 0.050 0.015

READ: 0.5

MEAN= 7.1 STD.DEV.= COEF.VAR.= 11.62 %

FB 0021

PEAK HEIGHT (ABSORBANCE) 0.585 0.458 0.128

PEAK AREA (ABS-SECONDS) 0.324 0.257 0.067

READ: 49.0

PEAK HEIGHT (ABSORBANCE) 0.566 0.444 0.122

PEAK AREA (ABS-SECONDS) 0.319 0.254 0.065

READ: 48.4

MEAN= 48.7 STD.DEV.=

FB 0022

PEAK AREA (ABS-SECONDS) 0.010 0.097

READ: -1.7

PEAK HEIGHT (ABSORBANCE) 0.009
PEAK AREA (ABS-SECONDS) 0.004

READ: -1.9

MEAN= -1.8 STD.DEV.= COEF.VAR.= 8.48 %

PEAK HEIGHT (ABSORBANCE) 0.008
PEAK AREA (ABS-SECONDS) 0.009

READ: -1.7

PEAK HEIGHT (ABSORBANCE) 0.009
PEAK AREA (ABS-SECONDS) 0.007

READ: -1.8

MEAN= -1.7 STD.DEV.= COEF.VAR.= 4.43 %

PEAK HEIGHT (ABSORBANCE) 0.436
PEAK AREA (ABS-SECONDS) 0.248

READ: 35.6

PEAK HEIGHT (ABSORBANCE) 0.137
PEAK AREA (ABS-SECONDS) 0.132

READ: 34.7

MEAN= 35.1 STD.DEV.= COEF.VAR.= 2.07 %

PEAK HEIGHT (ABSORBANCE) 0.033
PEAK AREA (ABS-SECONDS) 0.072

READ: -1.3

PEAK HEIGHT (ABSORBANCE) 0.031
PEAK AREA (ABS-SECONDS) 0.057

READ: -1.0

PB 0026

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.268
0.247
ZAA 0.216
0.160
BS 0.054
0.097

READ: 28.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.270
0.245
ZAA 0.218
0.158
BS 0.055
0.097

READ: 27.6

MEAN= 27.8 STD.DEV.=

COEF.VAR.= 1.39 %

PB 0027

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.265
0.251
ZAA 0.216
0.160
BS 0.051
0.100

READ: 28.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.252
0.251
ZAA 0.210
0.159
BS 0.053
0.092

READ: 27.8

MEAN= 27.9 STD.DEV.=

COEF.VAR.= 0.15 %

PB 0028

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.153
0.167
ZAA 0.008
0.005
BS 0.147
0.161

READ: -1.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.129
0.151
ZAA 0.008
0.005
BS 0.121
0.145

READ: -2.0

MEAN= -1.9 STD.DEV.=

COEF.VAR.= 2.99 %

PB 0029

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.095
0.111
ZAA 0.007
0.005
BS 0.090
0.105

READ: -2.1

06382-1A 10x

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: -2.1
MEAN= -2.1 STD.DEV.=

PB 0030
COEF.VAR.= 2.59 %
ZAA 0.080
E5 0.075
0.007
0.004
-2A 10x

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: -1.5
MEAN= -1.6 STD.DEV.=

PB 0031
COEF.VAR.= 4.10 %
ZAA 0.053
E5 0.042
0.056
0.007
-3A 10x

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: -1.6
MEAN= -1.8 STD.DEV.=

PB 0032
COEF.VAR.= 15.54 %
ZAA 0.009
E5 0.002
0.008
0.005
B6/13

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 80.8
MEAN= 89.1 STD.DEV.=

PB 0033
COEF.VAR.= 1.93 %
ZAA 0.819
E5 0.159
0.504
0.198
0.630
0.357
(89.1)(20)(100) = 178.2
ZAA 0.822
E5 0.628
0.506
0.143
B5 20x = 85.7%

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 85.4
MEAN= 89.1 STD.DEV.=

PB 0033
COEF.VAR.= 1.93 %
ZAA 0.819
E5 0.159
0.504
0.198
0.630
0.357
(89.1)(20)(100) = 178.2
ZAA 0.822
E5 0.628
0.506
0.143
B5 20x = 85.7%

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0.328
0.482

See 06119-1c

READ: 109.7

MEAN= 104.8 STD.DEV.=

COEF. VAR. = 0.65 %

E-51: ABSORBANCE BEYOND CALIBRATION FUNCTION

PB 0034

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0.894
0.546

0.894
0.546

READ: 100.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0.904
0.545

0.904
0.545

READ: 99.4

MEAN= 99.5 STD.DEV.=

COEF. VAR. = 0.90 %

PB 0035

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

1.631
1.605

1.631
1.605

READ: 147.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

1.662
1.535

1.662
1.535

READ: 140.2

MEAN= 144.1 STD.DEV.=

COEF. VAR. = 2.87 %

E-51: ABSORBANCE BEYOND CALIBRATION FUNCTION

PB 0036

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0.916
0.535

0.916
0.535

READ: 118.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0.852
0.514

0.852
0.514

READ: 97.2

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.890 0.676 0.215
0.538 0.409 0.129

READ: 95.2

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.875 0.663 0.212
0.534 0.402 0.109

READ: 92.1

MEAN= 93.6 STD.DEV.= COEF.VAR.= 3.95 %

PE 0037

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 1.318 0.948 0.375
0.873 0.649 0.224

READ: 53.0

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 1.295 0.933 0.367
0.350 0.640 0.215

READ: 47.8

MEAN= 50.5 STD.DEV.= COEF.VAR.= 2.61 %

E-51: ABSORBANCE BEYOND CALIBRATION FUNCTION

PE 0038

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.607 0.476 0.133
0.324 0.260 0.064

READ: 49.7

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.592 0.462 0.126
0.320 0.253 0.067

READ: 48.0

MEAN= 48.9 STD.DEV.= COEF.VAR.= 2.93 %

PE 0039

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.614 0.479 0.137
0.332 0.254 0.068

READ: 50.6

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.608 0.474 0.134
0.326 0.251 0.067

READ: 49.8

PB 0040

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.011
0.008

ZAA
0.009
0.008

BS
0.004
-0.001

READ: -1.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.012
0.016

ZAA
0.008
0.008

BS
0.005
0.009

READ: -1.6

MEAN= -1.5 STD.DEV.=

COEF. VAR. = 5.97 %

PB 0041

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.836
0.599

ZAA
0.643
0.378

BS
0.194
0.001

READ: 92.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.735
0.613

ZAA
0.515
0.383

BS
0.182
0.231

READ: 94.3

MEAN= 93.5 STD.DEV.=

COEF. VAR. = 2.29 %

PB 0042

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.947
0.818

ZAA
0.714
0.576

BS
0.244
0.241

READ: -46.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.325
0.781

ZAA
0.090
0.552

BS
0.230
0.220

READ: -305.7

MEAN= -113.0 STD.DEV.=

COEF. VAR. = 99.93 %

E-51: ABSORBANCE BEYOND CALIBRATION FUNCTION

PB 0043

PEAK HEIGHT (ABSORBAICE)
PEAK AREA (ABS-SECONDS)

AA
0.768
0.630

ZAA
0.588
0.431

BS
0.181
0.215

READ: 106.6

MEAN= 109.1 STD.DEV.= COEF.VAR.= 3.72 %

109.1

E-50: READING GREATER THAN HIGHEST STANDARD

PEAK 0044

PEAK HEIGHT (ABSORBANCE) AA 0.834 ZAA 0.634 RG 0.200
PEAK AREA (ABS-SECONDS) 0.675 0.490 0.179

READ: 197.1

PEAK HEIGHT (ABSORBANCE) AA 0.836 ZAA 0.637 RG 0.201
PEAK AREA (ABS-SECONDS) 0.674 0.495 0.179

READ: 183.4

MEAN= 185.2 STD.DEV.= COEF.VAR.= 2.84 %

185.2

E-50: READING GREATER THAN HIGHEST STANDARD

PEAK 0045

PEAK HEIGHT (ABSORBANCE) AA 1.492 ZAA 1.057 RG 0.430
PEAK AREA (ABS-SECONDS) 1.115 0.685 0.431

READ: 70.2

PEAK HEIGHT (ABSORBANCE) AA 1.417 ZAA 1.006 RG 0.413
PEAK AREA (ABS-SECONDS) 1.153 0.715 0.438

READ: 81.2

MEAN= 76.0 STD.DEV.= COEF.VAR.= 6.95 %

E-51: ABSORBANCE BEYOND CALIBRATION FUNCTION

PEAK 0045

PEAK HEIGHT (ABSORBANCE) AA 0.578 ZAA 0.451 RG 0.127
PEAK AREA (ABS-SECONDS) 0.475 0.291 0.195

READ: 57.0

PEAK HEIGHT (ABSORBANCE) AA 0.581 ZAA 0.458 RG 0.129
PEAK AREA (ABS-SECONDS) 0.457 0.286 0.171

READ: 55.9

MEAN= 56.5 STD.DEV.= COEF.VAR.= 1.7 %

PEAK 0017

PEAK HEIGHT (ABSORBANCE) AA 1.717 ZAA 1.006 RG 0.413

PEAK HEIGHT (ABSORBANCE) AA 0.848 ZAA 0.648 PG 0.202
PEAK AREA (ABS-SECONDS) 0.642 0.423 0.219

READ: 102.1

MEAN= 101.0 STD.DEV.=

COEF.VAR.= 2.73 %

PB 0048

PEAK HEIGHT (ABSORBANCE) AA 0.869 ZAA 0.659 PG 0.213
PEAK AREA (ABS-SECONDS) 0.675 0.501 0.174

READ: 202.8

PB 0049

PEAK HEIGHT (ABSORBANCE) AA 0.984 ZAA 0.736 PG 0.247
PEAK AREA (ABS-SECONDS) 0.324 0.416 0.238

READ: 109.9

PB 0050

PEAK HEIGHT (ABSORBANCE) AA 0.534 ZAA 0.419 PG 0.115
PEAK AREA (ABS-SECONDS) 0.345 0.188 0.159

READ: 33.7

PEAK HEIGHT (ABSORBANCE) AA 0.516 ZAA 0.406 PG 0.110
PEAK AREA (ABS-SECONDS) 0.338 0.194 0.135

READ: 32.9

MEAN= 33.3 STD.DEV.=

COEF.VAR.= 1.94 %

PB 0051

PEAK HEIGHT (ABSORBANCE) AA 0.619 ZAA 0.478 PG 0.141
PEAK AREA (ABS-SECONDS) 0.368 0.298 0.081

READ: 56.3

PEAK HEIGHT (ABSORBANCE) AA 0.550 ZAA 0.426 PG 0.124
PEAK AREA (ABS-SECONDS) 0.304 0.235 0.069

READ: 44.0

MEAN= 50.0 STD.DEV.=

COEF.VAR.= 20.81 %

PB 0051

PEAK HEIGHT (ABSORBANCE) AA 0.516 ZAA 0.420 PG 0.136
PEAK AREA (ABS-SECONDS) 0.326 0.247 0.106

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 50.7

MEAN= 50.9 STD.DEV.=

PE 0052

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 44.3

PE 0052

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: -1.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: -2.0

MEAN= -1.8 STD.DEV.=

PE 0053

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 125.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 125.1

MEAN= 125.2 STD.DEV.=

125.2

E-50: READING GREATER THAN HIGHEST STANDARD

PE 0054

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 62.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 60.5

AA 0.510
0.474
0.338

CC43

COEF.VAR.= 0.51 %

AA 0.625
0.305

ZAA 0.485
0.237

BS 0.140
0.068

AA 0.008
0.008

ZAA 0.008
0.008

BS 0.002
0.001

AA 0.008
0.007

ZAA 0.006
0.005

BS 0.003
0.002

COEF.VAR.= 20.04 %

AA 0.714
0.725

ZAA 0.550
0.157

BS 0.164
0.071

See dilution

AA 0.734
0.709

ZAA 0.570
0.456

BS 0.165
0.0752

06405-3c

COEF.VAR.= 0.29 %

AA 0.610
0.526

ZAA 0.487
0.311

BS 0.124
0.076

AA 0.551
0.517

ZAA 0.436
0.304

BS 0.119
0.071

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 36.6

AA 0.477
ZAA 0.376
EG 0.101
0.201

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 38.3

AA 0.491
ZAA 0.383
EG 0.101
0.178

06348-79

MEAN= 37.4 STD.DEV.=
PEAK 0056

COEF.VAR.= 3.43 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 38.4

AA 0.415
ZAA 0.342
EG 0.101
0.210

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 43.6

AA 0.416
ZAA 0.336
EG 0.082
0.130

06378-72

MEAN= 41.0 STD.DEV.=
PEAK 0057

COEF.VAR.= 10.06 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: -2.2

AA 0.008
ZAA 0.006
EG 0.007
0.005

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: -2.2

AA 0.008
ZAA 0.006
EG 0.007
0.011

PB6113

MEAN= -2.2 STD.DEV.=
PEAK 0058

COEF.VAR.= 2.84 %

(26.9)(20)(20)

153.8

PEAK 0058

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 77.4

AA 1.002
ZAA 0.752
EG 0.250
0.110

1200

208.0

73.9%

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)
READ: 77.4

AA 1.005
ZAA 0.757
EG 0.250
0.110

MEAN= 76.9 STD.DEV.=

COEF.VAR.= 1.57 %

PB 0059

PEAK HEIGHT (ABSORBANCE) AA 0.596 ZAA 0.546 B5 0.150
PEAK AREA (ABS-SECONDS) 0.460 0.339 0.121

READ: 70.1

PEAK HEIGHT (ABSORBANCE) AA 0.718 ZAA 0.562 B5 0.156
PEAK AREA (ABS-SECONDS) 0.454 0.339 0.126

READ: 59.8

MEAN= 70.0 STD.DEV.=

COEF.VAR.= 0.42 %

PB 0060

PEAK HEIGHT (ABSORBANCE) AA 0.754 ZAA 0.589 B5 0.169
PEAK AREA (ABS-SECONDS) 0.476 0.347 0.128

READ: 72.4

PEAK HEIGHT (ABSORBANCE) AA 0.730 ZAA 0.572 B5 0.161
PEAK AREA (ABS-SECONDS) 0.465 0.339 0.126

READ: 70.0

MEAN= 71.2 STD.DEV.=

COEF.VAR.= 3.33 %

PB 0061

PEAK HEIGHT (ABSORBANCE) AA 1.129 ZAA 0.840 B5 0.290
PEAK AREA (ABS-SECONDS) 0.517 0.374 0.141

READ: 81.0

PEAK HEIGHT (ABSORBANCE) AA 1.132 ZAA 0.848 B5 0.294
PEAK AREA (ABS-SECONDS) 0.506 0.370 0.135

06220-2D (Ac only)

READ: 73.9

MEAN= 80.5 STD.DEV.=

COEF.VAR.= 1.51 %

PB 0061

PEAK HEIGHT (ABSORBANCE) AA 0.510 ZAA 0.247 B5 0.064
PEAK AREA (ABS-SECONDS) 0.133 0.111 0.040

READ: 15.3

PEAK HEIGHT (ABSORBANCE) AA 0.310 ZAA 0.245 B5 0.064
PEAK AREA (ABS-SECONDS) 0.131 0.101 0.040

READ: 16.3

5X
-2D (Ac only)

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.726
0.321

ZAA
0.552
0.247

PS
0.165
0.074

READ: 46.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.725
0.320

ZAA
0.562
0.245

PS
0.164
0.075

READ: 46.1

MEAN= 46.4 STD.DEV.=

COEF.VAR.= 0.79 %

FB 0063

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.731
0.313

ZAA
0.567
0.249

PS
0.165
0.069

READ: 47.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.728
0.317

ZAA
0.564
0.246

PS
0.166
0.071

READ: 46.5

MEAN= 46.8 STD.DEV.=

COEF.VAR.= 1.13 %

FB 0064

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.464
0.259

ZAA
0.367
0.179

PS
0.097
0.023

READ: 32.0

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.429
0.274

ZAA
0.342
0.176

PS
0.087
0.025

READ: 31.7

MEAN= 31.9 STD.DEV.=

COEF.VAR.= 0.73 %

FB 0065

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.525
0.381

ZAA
0.416
0.247

PS
0.110
0.121

READ: 46.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.521
0.375

ZAA
0.413
0.244

PS
0.109
0.119

READ: 45.9

PB 0066

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.397
0.254
ZAA 0.313
0.175
BS 0.094
0.079

READ: 31.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.403
0.253
ZAA 0.310
0.175
BS 0.086
0.077

READ: 31.4

MEAN= 31.3 STD.DEV.=

COEF.VAR.= 0.51 %

PB 0067

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.175
0.114
ZAA 0.139
0.075
BS 0.037
0.039

READ: 11.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.174
0.111
ZAA 0.140
0.074
BS 0.035
0.037

READ: 11.1

MEAN= 11.2 STD.DEV.=

COEF.VAR.= 1.19 %

PB 0068

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.240
0.154
ZAA 0.190
0.105
BS 0.050
0.049

READ: 17.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.236
0.153
ZAA 0.196
0.105
BS 0.049
0.047

READ: 17.1

MEAN= 17.1 STD.DEV.=

COEF.VAR.= 0.07 %

PB 0069

PEAK HEIGHT (ABSORBANCE)

AA 0.271
ZAA 0.213
BS 0.054

PEAK AREA (ABS-SECONDS)

0.172

READ: 19.7

READ: 19.9

MEAN= 19.8 STD.DEV.= COEF. VAR.= 0.69 %

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 52.2

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 49.0

MEAN= 50.6 STD.DEV.=

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 32.6

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: -1.6

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: -2.2

MEAN= -1.9 STD.DEV.=

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 19.5

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

READ: 20.3

MEAN= 19.9 STD.DEV.=

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA 0.582
0.340

ZAA 0.455
0.271

AA 0.617
0.325

ZAA 0.482
0.257

AA 0.452
0.295

ZAA 0.360
0.192

AA 0.007
0.006

ZAA 0.007
0.008

AA 0.007
0.007

ZAA 0.005
0.004

AA 0.277
0.172

ZAA 0.218
0.117

AA 0.277
0.176

ZAA 0.218
0.121

AA 0.265
0.137

ZAA 0.212
0.108

CCVf

CCBd

06119-14c SX

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.226
0.181
0.192

ZAA
0.181
0.106

AA
0.226
0.181
0.192

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 17.2
MEAN= 17.4 STD.DEV.=
PB 0.074

COEF.VAR.= 1.37 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.199
0.187

ZAA
0.159
0.114

AA
0.199
0.187

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 19.8
MEAN= 18.7 STD.DEV.=
PB 0.075

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.214
0.182

ZAA
0.170
0.113

AA
0.214
0.182

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 18.6
MEAN= 18.7 STD.DEV.=
PB 0.075

COEF.VAR.= 0.43 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.401
0.288

ZAA
0.320
0.171

AA
0.401
0.288

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 30.2
MEAN= 30.6 STD.DEV.=
PB 0.075

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.401
0.298

ZAA
0.322
0.174

AA
0.401
0.298

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 31.0
MEAN= 30.6 STD.DEV.=
PB 0.075

COEF.VAR.= 1.31 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.595
0.321

ZAA
0.454
0.253

AA
0.595
0.321

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 48.1
MEAN= 47.6 STD.DEV.=
PB 0.077

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.586
0.315

ZAA
0.458
0.249

AA
0.586
0.315

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 47.1
MEAN= 47.6 STD.DEV.=
PB 0.077

COEF.VAR.= 1.89 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.586
0.315

ZAA
0.458
0.249

AA
0.586
0.315

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 47.1
MEAN= 47.6 STD.DEV.=
PB 0.077

05

ZAA

AA

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0.008
0.005

0.006
0.005

READ: -2.1

MEAN: -2.0 STD. DEV. =

COEF. VAR. = 4.97 %

CBS

PROGRAMMING MODE INSTRUMENT

USER METH # 31 - CP

DATE: 24/05/17

ELEMENT: CR WAVELENGTH (NM): 357.9 SLIT (NM): 0.7
 PYRO COATED TUBE WITH PLATFORM - MAX POWER HEATING - GAS STOP - MATRIX MOD.
 PRETREAT TEMP: 1650 ATOMIZE TEMP: 2500 CHARACTER, MAES (PG) 9.3

1. TECHNIQUE: ZEEMAN
3. SIGNAL PROCESSING: PEAK AREA
5. TIME (SECONDS): 5.0
7. SCREEN FORMAT: 1.0 GRAPHICS
9. RECORDER SIGNAL: 0.2 CONT ABS
11. STATISTICS: 2 AVERAGE & CV
13. ROLLOVER(ABS): 1.500

2. LAMP CURRENT (MA): 20
4. CALIBRATION: AUTO SELECT
6. READ DELAY (SECONDS): 9.0
8. PRINTER: MAIN SUPPL
10. RECORDER EXP: 1000
12. NOMINAL WEIGHT 1.0
14. EC SCALE: 1.0

15. S1: 10.0 16. S2: 20.0 17. S3: 40.0
 18. S4: 19. S5: 20. S6:
 21. S7: 22. S8: 23. S9: 30.0

0677A

CP

TIME: 07:15

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.029
 0.024

ZAA
 0.024
 0.014

EC
 0.005
 0.010

FEAD: 0.014

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.030
 0.018

ZAA
 0.027
 0.013

EC
 0.005
 0.006

READ: 0.013

MEAN= 0.013 STD.DEV.=

 0.000 AUTOZERO

COEF.VAR.= 7.26 %

CP

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.134
 0.185

ZAA
 0.129
 0.176

EC
 0.009
 0.003

FEAD: 0.163

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.138
 0.191

ZAA
 0.132
 0.181

EC
 0.008
 0.011

READ: 0.160

MEAN= 0.165 STD.DEV.=

 10.0 STANDARD

COEF.VAR.= 2.07 %

CP

PEAK HEIGHT (ABSORBANCE)
 PEAK AREA (ABS-SECONDS)

AA
 0.256
 0.353

ZAA
 0.246
 0.341

EC
 0.012
 0.017

Opt. 12/24

PEAK HEIGHT (ABSORBANCE) 0.259 0.248 0.011
PEAK AREA (ABS-SECONDS) 0.367 0.348 0.010
READ: 20.3

MEAN= 20.1 STD. DEV. = 1.50 %

20.1

E-50: READING GREATER THAN HIGHEST STANDARD

20.0 STANDARD 2

CR

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.483 0.405 0.010
ZAA 0.630 0.650 0.008
EG

PEAD: 38.3

(CONTINUED)

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.481 0.461 0.020
ZAA 0.652 0.662 0.031
EG

PEAD: 38.9

MEAN= 38.6 STD. DEV. =

COEF. VAR. = 1.07 %

38.6

E-50: READING GREATER THAN HIGHEST STANDARD

40.0 STANDARD 3

CR 0005

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.266 0.254 0.012
ZAA 0.375 0.360 0.015
EG

PEAD: 21.0

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.259 0.249 0.011
ZAA 0.361 0.350 0.011
EG

PEAD: 20.4

MEAN= 20.7 STD. DEV. =

COEF. VAR. = 2.18 %

CR 0006

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.034 0.031 0.003
ZAA 0.035 0.031 0.003
EG

PEAD: 1.1

READ: 0.2

MEAN= 0.6

STD. DEV. =

COEF. VAR. = 99.99 %

CP 0007

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA

0.026

0.021

ZAA

0.024

0.014

EG

0.006

0.008

PEAD: 0.0

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA

0.026

0.021

ZAA

0.071

0.015

EG

0.004

0.006

READ: 0.1

MEAN= 0.1

STD. DEV. =

COEF. VAR. = 78.90 %

CP 0008

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA

0.306

0.429

ZAA

0.293

0.400

EG

0.014

0.120

PEAD: 23.5

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA

0.302

0.720

ZAA

0.293

0.599

EG

0.014

0.021

READ: 23.5

MEAN= 23.5

STD. DEV. =

COEF. VAR. = 0.13 %

CP 0009

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA

0.036

0.029

ZAA

0.035

0.027

EG

0.005

0.002

PEAD: 0.8

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA

0.029

0.025

ZAA

0.026

0.016

EG

0.004

0.009

READ: 0.2

MEAN= 0.5

STD. DEV. =

COEF. VAR. = 97.85 %

CP 0010

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA

0.026

0.017

ZAA

0.022

0.012

EG

0.004

0.005

PEAD: -0.1

TCB

6/13

PBS

06382-1A 10X

2A 10X

MEAN= -0.1 STD.DEV.= COEF.VAR.= 22.16 %

CR 0011

PEAK HEIGHT (ABSORBANCE) AA ZAA EG
PEAK AREA (ABS-SECONDS) 0.029 0.076 0.004
0.014 0.014 -0.001

READ: 0.1

PEAK HEIGHT (ABSORBANCE) AA ZAA EG
PEAK AREA (ABS-SECONDS) 0.024 0.024 0.005
0.022 0.014 0.009

READ: 0.0

MEAN= 0.1 STD.DEV.= COEF.VAR.= 16.46 %

-3A 10X

CR 0012

PEAK HEIGHT (ABSORBANCE) AA ZAA EG
PEAK AREA (ABS-SECONDS) 0.024 0.021 0.004
0.023 0.014 0.009

READ: 0.1

PEAK HEIGHT (ABSORBANCE) AA ZAA EG
PEAK AREA (ABS-SECONDS) 0.020 0.020 0.004
0.015 0.013 0.009

B 6/15

MEAN= 0.0 STD.DEV.= COEF.VAR.= 99.99 %

CR 0013

PEAK HEIGHT (ABSORBANCE) AA ZAA EG
PEAK AREA (ABS-SECONDS) 0.301 0.290 0.012
0.407 0.391 0.015

READ: 23.0

PEAK HEIGHT (ABSORBANCE) AA ZAA EG
PEAK AREA (ABS-SECONDS) 0.239 0.231 0.010
0.333 0.325 0.009

B 6/15

MEAN= 20.9 STD.DEV.= COEF.VAR.= 14.36 %

CR 0014

PEAK HEIGHT (ABSORBANCE) AA ZAA EG
PEAK AREA (ABS-SECONDS) 0.072 0.069 0.004
0.085 0.083 0.009

PEAK AREA (ABS-SECONDS) 0.004 0.079 0.002 0.005
0.007

READ: 3.5

MEAN= 3.8 STD.DEV.=

CP 0015

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 2.0

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 1.9

MEAN= 2.0 STD.DEV.=

CP 0015

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.8

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.6

MEAN= 0.7 STD.DEV.=

CP 0017

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 18.5

MEAN= 18.7 STD.DEV.=

CP 0018

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 19.0

MEAN= 19.7 STD.DEV.=

CP 0019

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 2.09

MEAN= 2.1 STD.DEV.=

CP 0020

06523-1B

COEF.VAR.= 12.39 %

AA 0.046
0.055
ZAA 0.046
0.047
EG 0.007
0.008

AA 0.046
0.053
ZAA 0.046
0.046
EG 0.007
0.007

COEF.VAR.= 1.37 %

AA 0.031
0.031
ZAA 0.027
0.026
EG 0.006
0.005

AA 0.028
0.025
ZAA 0.023
0.023
EG 0.004
0.002

COEF.VAR.= 16.24 %

AA 0.236
0.237
ZAA 0.229
0.219
EG 0.011
0.012

AA 0.246
0.245
ZAA 0.247
0.227
EG 0.013
0.018

COEF.VAR.= 2.09 %

AA 0.004
0.004
ZAA 0.004
0.004
EG 0.004
0.004

PEAK HEIGHT (ABSORBANCE) AA 0.250 ZAA 0.237 BC 0.013
PEAK AREA (ABS-SECONDS) 0.350 0.331 0.019

READ: 19.2

MEAN= 19.1 STD. DEV. =

CP 0019

COEF. VAR. = 0.73 %

PEAK HEIGHT (ABSORBANCE) AA 0.020 ZAA 0.026 BC 0.003
PEAK AREA (ABS-SECONDS) 0.025 0.022 0.004

READ: 0.5

PEAK HEIGHT (ABSORBANCE) AA 0.019 ZAA 0.019 BC 0.007
PEAK AREA (ABS-SECONDS) 0.023 0.015 0.005

READ: 0.1

MEAN= 0.3 STD. DEV. =

CP 0020

COEF. VAR. = 99.63 %

PEAK HEIGHT (ABSORBANCE) AA 0.233 ZAA 0.276 BC 0.010
PEAK AREA (ABS-SECONDS) 0.336 0.320 0.016

READ: 18.5

$$(18.5)(100)(100) = 18500$$

PEAK HEIGHT (ABSORBANCE) AA 0.233 ZAA 0.276 BC 0.010
PEAK AREA (ABS-SECONDS) 0.336 0.320 0.016

READ: 18.4

MEAN= 18.5 STD. DEV. =

CP 0021

COEF. VAR. = 0.72 %

PEAK HEIGHT (ABSORBANCE) AA 0.501 ZAA 0.714 BC 0.009
PEAK AREA (ABS-SECONDS) 0.501 0.743 0.242

READ: 45.7

CP 0022

PEAK HEIGHT (ABSORBANCE) AA 0.946 ZAA 0.890 BC 0.049
PEAK AREA (ABS-SECONDS) 1.368 1.602 0.055

READ: 84.4

CP 0023

PEAK HEIGHT (ABSORBANCE) AA 0.212 ZAA 0.204 BC 0.011
PEAK AREA (ABS-SECONDS) 0.334 0.322 0.015

READ: 18.7

$$\frac{18500}{18790} = 98.9\%$$

See subtraction
06119-1c

See subtraction
-2c

READ: 18.6

cal

MEAN= 18.6 STD.DEV.=

COEF.VAR.= 0.11 %

CR 0024

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA 0.015
ZAA 0.013
EC 0.004
0.005

PEAD: 0.2

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA 0.011
ZAA 0.010
EC 0.004
0.004

PEAD: 0.3

CCB

MEAN= 0.0 STD.DEV.=

COEF.VAR.= 99.99 %

CR 0025

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA 1.534
ZAA 1.296
EC 0.007
0.017

PEAD: 192.8

E-07: VALUE GREATER THAN FOLLOVER ABSORBANCE

CR 0026

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA 1.054
ZAA 1.045
EC 0.049
0.041

PEAD: 111.5

-4c

CR 0027

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA 1.021
ZAA 0.970
EC 0.052
0.053

PEAD: 100.6

-5c

CR 0028

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA 0.255
ZAA 0.245
EC 0.015
0.001

PEAD: 22.8

PEAK HEIGHT (ABSORBANCE)

PEAK AREA (ABS-SECONDS)

AA 0.256
ZAA 0.246
EC 0.019
0.002

PEAD: 23.0

-6c

MEAN= 22.9 STD.DEV.=

COEF.VAR.= 0.59 %

CR 0029

revenue -16

CR 0030

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 93.5

CR 0031

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 95.5

CR 0032

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 152.3

CR 0033

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 70.3

CR 0034

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 73.8

CR 0035

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 18.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 18.5

MEAN= 18.5 STD.DEV.=

CR 0036

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 0.4

AA 97.97
ZAA 9.918
1.426

See subtraction -8c

AA 97.97
ZAA 9.918
1.426

See subtraction -9c

AA 97.97
ZAA 9.918
1.426

See subtraction -10c

AA 97.97
ZAA 9.918
1.426

See subtraction -11c

AA 97.97
ZAA 9.918
1.426

See subtraction -12c

AA 97.97
ZAA 9.918
1.426

AA 97.97
ZAA 9.918
1.426

CCM

COEF.VAR.= 0.08 7

AA 97.97
ZAA 9.918
1.426

AA 97.97
ZAA 9.918
1.426

MEAN= 0.1 STD.DEV.= COEF. VAR. = 99.99 %

CP 0037

PEAK HEIGHT (ABSORBANCE) AA 0.502 ZAA
PEAK AREA (ABS-SECONDS) 0.9589 0.886

READ: 55.2
CP 0038

PEAK HEIGHT (ABSORBANCE) AA 1.202 ZAA
PEAK AREA (ABS-SECONDS) 1.135 1.935

READ: 182.9
CP 0039

PEAK HEIGHT (ABSORBANCE) AA 0.163 ZAA
PEAK AREA (ABS-SECONDS) 0.264 0.244

READ: 13.9

PEAK HEIGHT (ABSORBANCE) AA 0.152 ZAA
PEAK AREA (ABS-SECONDS) 0.250 0.236

READ: 13.4

MEAN= 13.6 STD.DEV.= COEF. VAR. = 0.24 %

CP 0040

PEAK HEIGHT (ABSORBANCE) AA 0.352 ZAA
PEAK AREA (ABS-SECONDS) 0.558 0.542

READ: 32.5

PEAK HEIGHT (ABSORBANCE) AA 0.361 ZAA
PEAK AREA (ABS-SECONDS) 0.575 0.552

READ: 33.2

MEAN= 32.8 STD.DEV.= COEF. VAR. = 1.40 %

CP 0041

PEAK HEIGHT (ABSORBANCE) AA 0.357 ZAA
PEAK AREA (ABS-SECONDS) 0.574 0.532

READ: 33.2

PEAK HEIGHT (ABSORBANCE) AA 0.352 ZAA
PEAK AREA (ABS-SECONDS) 0.581 0.552

READ: 33.2

06220-25 (Ac only)

-25 spk

-25 dup spk

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 18.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 18.2

MEAN= 18.3 STD.DEV.=
CIR 0043

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 9.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 3.7

MEAN= 3.0 STD.DEV.=
CIR 0044

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 15.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 16.7

MEAN= 16.6 STD.DEV.=
CIR 0045

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 5.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 5.0

MEAN= 5.2 STD.DEV.=

AA 0.202
0.334

AA 0.200
0.328

AA 0.095
0.117

AA 0.090
0.102

AA 0.187
0.301

AA 0.191
0.305

AA 0.062
0.101

AA 0.062
0.111

EG 0.009
0.016

EG 0.009
0.014

EG -0.002
-0.057

EG 0.000
-0.057

EG 0.019
0.017

EG 0.020
0.015

EG 0.001
0.002

EG 0.006
0.012

PBS sf 2

06119-1c

-2c

-3c

50x

CR 0046

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.067
0.112
ZAA 0.063
0.100
EG 0.008
0.017

READ: 5.2

AA 0.065
0.108
ZAA 0.063
0.100
EG 0.006
0.008

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

READ: 5.2

MEAN= 5.2 STD.DEV.= 0.20
COEF.VAR.= 0.038

CR 0047

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.112
0.177
ZAA 0.110
0.175
EG 0.009
0.066

READ: 9.7

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.115
0.181
ZAA 0.113
0.177
EG 0.006
0.004

READ: 9.8

MEAN= 9.7 STD.DEV.= 0.81
COEF.VAR.= 0.081

CR 0048

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.181
0.292
ZAA 0.174
0.298
EG 0.014
0.011

READ: 10.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.182
0.296
ZAA 0.174
0.298
EG 0.019
0.013

READ: 16.3

MEAN= 16.8 STD.DEV.= 1.20
COEF.VAR.= 0.071

CR 0049

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.202
0.323
ZAA 0.193
0.310
EG 0.014
0.013

READ: 17.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.195
0.317
ZAA 0.188
0.310
EG 0.015
0.006

READ: 18.0

PEAK HEIGHT (ABSORBANCE) AA 0.205 EC 0.015
PEAK AREA (ABS-SECONDS) 0.332 0.011

READ: 18.6

PEAK HEIGHT (ABSORBANCE) ZAA 0.200 EC 0.015
PEAK AREA (ABS-SECONDS) 0.322 0.012

READ: 18.7

MEAN= 18.6 STD.DEV.= COEF.VAR.= 0.10 %

CR 0051

PEAK HEIGHT (ABSORBANCE) AA 0.212 EC 0.015
PEAK AREA (ABS-SECONDS) 0.338 0.012

READ: 18.9

PEAK HEIGHT (ABSORBANCE) ZAA 0.216 EC 0.012
PEAK AREA (ABS-SECONDS) 0.352 0.012

READ: 20.5

MEAN= 19.7 STD.DEV.= COEF.VAR.= 5.88 %

CR 0052

PEAK HEIGHT (ABSORBANCE) AA 0.048 EC 0.006
PEAK AREA (ABS-SECONDS) 0.082 0.003

READ: 3.6

PEAK HEIGHT (ABSORBANCE) ZAA 0.040 EC 0.005
PEAK AREA (ABS-SECONDS) 0.067 0.004

READ: 3.0

MEAN= 3.3 STD.DEV.= COEF.VAR.= 13.48 %

CR 0053

PEAK HEIGHT (ABSORBANCE) AA 0.044 EC 0.005
PEAK AREA (ABS-SECONDS) 0.073 0.005

READ: 3.2

PEAK HEIGHT (ABSORBANCE) ZAA 0.041 EC 0.005
PEAK AREA (ABS-SECONDS) 0.067 0.005

READ: 3.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.136
0.180

EG
0.001
0.048

READ: 12.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.138
0.190

EG
0.007
0.041

READ: 13.0

MEAN= 13.0 STD.DEV.=

COEF. VAR. = 0.80 %

CP 0055

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.158
0.257

EG
0.010
0.015

READ: 13.7

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.157
0.254

EG
0.010
0.012

READ: 13.7

MEAN= 13.7 STD.DEV.=

COEF. VAR. = 0.09 %

CP 0056

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.121
0.192

EG
0.004
0.009

READ: 10.7

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.123
0.195

EG
0.005
0.006

READ: 10.6

MEAN= 10.7 STD.DEV.=

COEF. VAR. = 1.04 %

CP 0057

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.038
0.054

EG
0.004
0.001

READ: 2.9

PEAK HEIGHT (ABSORBANCE)

AA
0.036

EG
0.001

MEAN= 2.8 STD.DEV.= COEF.VAR.=

CR 0059

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.219
0.354
ZAA 0.210
0.337
PG 0.011
0.010

READ: 19.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.224
0.350
ZAA 0.214
0.345
PG 0.010
0.013

READ: 20.1

MEAN= 19.8 STD.DEV.=

COEF.VAR.= 1.80

CR 0059

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.016
0.021
ZAA 0.017
0.022
PG 0.004
0.001

READ: 0.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.011
0.015
ZAA 0.011
0.011
PG 0.004
0.004

READ: -0.1

MEAN= 0.2 STD.DEV.=

COEF.VAR.= 99.99

1.58 11B-5pk dup

HG 0011

ABSORBANCE AH AH-BG BG
0.004 0.002 0.002

0.09

HG 0012

ABSORBANCE AH AH-BG BG
0.012 0.010 0.008

0.50

HG 0013

ABSORBANCE AH AH-BG BG
0.005 0.002 0.002

0.11

HG 0014

ABSORBANCE AH AH-BG BG
0.002 0.001 0.002

0.04

HG 0015

ABSORBANCE AH AH-BG BG
0.003 0.001 0.002

0.07

HG 0016

ABSORBANCE AH AH-BG BG
0.002 0.000 0.001

0.01

HG 0017

ABSORBANCE AH AH-BG BG
0.002 0.000 0.002

0.01

HG 0018

ABSORBANCE AH AH-BG BG
0.001 0.000 0.000

0.00

HG 0019

0405083-30

4405D00-1C (sample)

0.05

11G 0020

ABSORBANCE

AA 0.055
AA-BG 0.054
BG 0.001

2.72

cell

11G 0021

ABSORBANCE

AA 0.002
AA-BG 0.001
BG 0.001

0.05

cell

11G 0022

ABSORBANCE

AA 0.001
AA-BG 0.001
BG 0.001

0.05

cell

11G 0023

ABSORBANCE

AA 0.042
AA-BG 0.041
BG 0.001

2.00

1C (741C)

11G 0024

ABSORBANCE

AA 0.039
AA-BG 0.039
BG 0.000

1.47

5C (spt dig 1C)

11G 0025

ABSORBANCE

AA 0.000
AA-BG -0.001
BG 0.000

-0.04

6C (dup. cat 1C)

11G 0026

ABSORBANCE

AA 0.000
AA-BG 0.000
BG 0.000

0.00

cell

11G 0027

ABSORBANCE

AA 0.001
AA-BG 0.001
BG 0.001

0.07

cell

11G 0028

ABSORBANCE

AA 0.001
AA-BG 0.001
BG 0.001

116 0039
RESORBANCE

116 0030
RESORBANCE

116 0031
RESORBANCE

116 0032
RESORBANCE

116 0033
RESORBANCE

116 0034
RESORBANCE

116 0035
RESORBANCE

116 0036
RESORBANCE

116 0037
RESORBANCE

BA

12C

13C

14C

15C

16C

9405002-15C

9405033-1C

2C

0.11
 HG 0038
 REFERENCE
 HA 0.002
 HA-EG 0.002
 EG 0.001

2A

0.11
 HG 0039
 REFERENCE
 HA 0.002
 HA-EG 0.002
 EG 0.001

3A

0.11
 HG 0040
 REFERENCE
 HA 0.002
 HA-EG 0.002
 EG 0.001

4A

0.11
 HG 0041
 REFERENCE
 HA 0.002
 HA-EG 0.002
 EG 0.001

7A

0.11
 HG 0042
 REFERENCE
 HA 0.002
 HA-EG 0.002
 EG 0.001

8A

0.11
 HG 0043
 REFERENCE
 HA 0.002
 HA-EG 0.002
 EG 0.001

13A

0.13
 HG 0044
 REFERENCE
 HA 0.002
 HA-EG 0.002
 EG 0.001

003

003

0050

ABSORBANCE

0.009 0.009 0.009

2.27

110 0057

ABSORBANCE

0.004 0.004 0.004

0.01

110 0058

ABSORBANCE

0.001 0.001 0.001

-0.02

110 0059

ABSORBANCE

0.001 0.001 0.001

-0.02

110 0060

ABSORBANCE

0.001 0.001 0.001

-0.01

110 0061

ABSORBANCE

0.001 0.001 0.001

0.05

110 0062

ABSORBANCE

0.001 0.001 0.001

110 0062

ABSORBANCE

0.001 0.001 0.001

0.01

110 0063

ABSORBANCE

0.001 0.001 0.001

9405046-32A (Composite of 4 JARS)

RESOLVANCE

0.119

0.114

0.113

5.70

Lot 219

LESS-3

110 0065

PERFORMANCE

0.004

0.002

0.003

-0.08

9406112-1A

110 0067

PERFORMANCE

0.004

0.002

0.003

1.69

11.51

110 0068

PERFORMANCE

0.004

0.002

0.003

2.14

11.51

110 0069

PERFORMANCE

0.004

0.002

0.003

0.12

3E

110 0070

PERFORMANCE

0.004

0.002

0.003

0.12

AC

110 0071

110 0071

CONTINUED

PERFORMANCE

0.004

0.002

0.003

0.04

5C

110 0072

PERFORMANCE

0.004

0.002

0.003

2.10

11.51

110 0073

PERFORMANCE

0.004

0.002

0.003

REFERENCE 0.00 0.00 0.00

0.14 9406112-6C

110 0075
REFERENCE 0.001 0.002 0.003

0.09 PR-1

110 0077
REFERENCE 0.002 0.003 0.004

3.04 lot 219 / LESS-4 SDC #105

1.0 0077
REFERENCE 0.001 0.002 0.003

0.0 9406119-1C

110 0077
REFERENCE 0.002 0.003 0.004

0.0 105pk

110 0077
REFERENCE 0.001 0.002 0.003

0.0 105pk

110 0080
REFERENCE 0.001 0.002 0.003

0.02 2C

110 0087
REFERENCE 0.001 0.002 0.003

0.0 3C

110 0087
REFERENCE 0.001 0.002 0.003

0.0 3C

0.11 50

ABSORBANCE	AA	AA-EG	EG
	0.000	-0.001	0.002

0.06
0.05
REFERENCE
44-66
-0.06
25
0.06
4C

[illegible][illegible]

DATE	NO	AMOUNT	EG
1900	1000	1000	1000

2.72 0035 17

ESURFANCE	43	44-45	46
-0.12	0.000	-0.001	0.001

DATE	BY	REMARKS	BY	REMARKS
10/10/10	100			

[illegible]

REFERENCE

0.000 0.000 0.000

0.15

070

REFERENCE

0.000 0.000 0.000

0.02

070

REFERENCE

0.000 0.000 0.000

0.06

070

REFERENCE

0.000 0.000 0.000

0.01

070

REFERENCE

0.000 0.000 0.000

0.08

070

REFERENCE

0.000 0.000 0.000

0.77

070

REFERENCE

0.000 0.000 0.000

0.00

070

REFERENCE

0.000 0.000 0.000

007

10

40 30

40 50 40

612 19 655-4

007

007

oper Tech

PROGRAMMING MODE INSTRUMENT USER METH # 08 - SE DATE: 01/06/15
ELEMENT: SE WAVELENGTH (NM): 196.0 SLIT (MM): 2.0
PYRO COATED TUBE WITH PLATFORM - MAX POWER HEATING - GAS STOP DATE: 1/6/15
PRETREAT TEMP: 900 ATONIZE TEMP: 2100 CHAPACT. MAG: 10.0

- 1. TECHNIQUE: ZEEMAN
- 2. LAMP CURRENT (MA): 0
- 3. SIGNAL PROCESSING: PEAK AREA
- 4. CALIBRATION: LINEAR
- 5. TIME (SECONDS): 5.0
- 6. PEAK DELAY (SECONDS): 0.0
- 7. SCREEN FORMAT: 1.0 GRAPHICS
- 8. PRINTER: MAIN GRAPH
- 9. RECORDER SIGNAL: 0.2 CONT AES
- 10. RECORDING EXP: 1000
- 11. STATISTICS: 2 AVERAGE & CV
- 12. NOMINAL WEIGHT 1.0
- 13. ROLLOVER(AES): 1.400
- 14. EG SCALE: 1.0

15. S1: 25.0 16. S2: 50.0 17. S3: 100.0
18. S4: 19. S5: 20. S6:
21. S7: 22. S8: 23. S9: 100.0

016 WFL
0615B

SEE

TIME 10:10

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA
0.013 0.013
0.009 0.009

EG
0.010
0.001

READ: 0.000

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA
0.010 0.013
-0.007 0.001

EG
0.000
0.008

PEAD: -0.007

MEAN= -0.003 STD.DEV.=

COEF.VAR.= 99.997

0.000 AUTOZERO

SEE

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA
0.173 0.138
0.117 0.085

EG
0.035
0.031

PEAD: 0.081

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA
0.173 0.134
0.124 0.080

EG
0.039
0.030

READ: 0.054

MEAN= 0.082 STD.DEV.=

COEF.VAR.= 2.097

25.0 STANDARD

SEE

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA ZAA
0.325 0.256
0.224 0.169

EG
0.030
0.030

PEAK HEIGHT (ABSORBANCE) 0.220 0.230 0.075
PEAK AREA (ABS-SECONDS) 0.159 0.159 0.050

READ: 47.1

S2

MEAN= 48.4 STD. DEV. = COEF. VAP. = 3.75 %
48.4

E-50: READING GREATER THAN HIGHEST STANDARD

STANDARD 2

SE

PEAK HEIGHT (ABSORBANCE) AA 0.594 TAA 0.455 EC 0.143
PEAK AREA (ABS-SECONDS) 0.404 0.304 0.100

READ: 93.4

(CONTINUED)

PEAK HEIGHT (ABSORBANCE) AA 0.598 TAA 0.451 EC 0.146
PEAK AREA (ABS-SECONDS) 0.410 0.302 0.109

READ: 92.8

S3

MEAN= 93.1 STD. DEV. = COEF. VAP. = 0.41 %
93.1

E-50: READING GREATER THAN HIGHEST STANDARD

STANDARD 3

SE

PEAK HEIGHT (ABSORBANCE) AA 0.312 TAA 0.239 EC 0.077
PEAK AREA (ABS-SECONDS) 0.213 0.149 0.064

READ: 47.6

PEAK HEIGHT (ABSORBANCE) AA 0.310 TAA 0.242 EC 0.073
PEAK AREA (ABS-SECONDS) 0.216 0.163 0.053

READ: 52.1

lev

MEAN= 49.8 STD. DEV. = COEF. VAP. = 6.35 %
49.8

SE

PEAK HEIGHT (ABSORBANCE) AA 0.010 TAA 0.008 EC 0.000
PEAK AREA (ABS-SECONDS) 0.008 0.000 0.000

READ: -1.3

READ: -1.3

MEAN= -1.5

STD.DEV.= 0.007

COEF.VAR.= 20.12

SEE 0007

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.011
0.017
ZAA 0.007
0.000
BC 0.010
0.011

PEAD: -1.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.010
0.008
ZAA 0.003
0.002
BC 0.006
0.010

FEAD: -1.3

MEAN= -1.7

STD.DEV.= 0.005

COEF.VAR.= 20.65

SEE 0008

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

$$\frac{(49.9)(20)(100)}{122.0} = 81.6\%$$

FEAD: 49.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.345
0.133
ZAA 0.252
0.155
BC 0.086
0.079

READ: 50.2

MEAN= 49.9

STD.DEV.= 0.88

COEF.VAR.= 0.88

SEE 0009

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.158
0.413
ZAA 0.019
0.016
BC 0.140
0.097

PEAD: 4.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.154
0.430
ZAA 0.019
0.017
BC 0.136
0.047

FEAD: 4.3

MEAN= 4.2

STD.DEV.= 4.85

COEF.VAR.= 4.85

SEE 0010

PEAK HEIGHT (ABSORBANCE)

AA 0.108

Avg	- .0022	2.675	.0035	.1001	.0021	239.4	.0007
SDev	.0000	.003	.0108	.0000	.0001	.9	.0026
XRSD	1.168	.1170	309.0	.0219	2.372	.3934	.367.6
#1	- .0022	2.677	- .0041	.1001	.0021	238.7	- .0011
#2	- .0022	2.672	.0111	.1001	.0022	240.1	.0026
Elem	Co2286	Cr2677	Cu3247	Fe2599	K_7664	Hg2790	Hn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.0031	.0266	.0203	10.38	- .0175	18.74	.5489
SDev	.0013	.0010	.0017	.02	.6698	.09	.0018
XRSD	43.68	3.689	8.558	.1803	3829.	.4822	.3237
#1	.0021	.0273	.0191	10.36	- .4911	18.68	.5477
#2	.0040	.0259	.0216	10.39	.4562	18.81	.5502
Elem	Na5889	Ni2316	Pb2203	Sb2068	Se1960	Ti1908	V_2024
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.4884	.0321	.0595	.0031	.0944	- .0724	.0087
SDev	.0115	.0034	.0317	.0139	.0292	.0699	.0002
XRSD	2.346	10.76	53.19	454.3	30.90	96.66	2.001
#1	.4803	.0297	.0371	- .0068	.0738	- .1218	.0086
#2	.4965	.0345	.0819	.0129	.1150	- .0229	.0088
Elem	Zn2138						
Units	ppm						
Avg	.0906						
SDev	.0011						
XRSD	1.199						
#1	.0899						
#2	.0914						

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.030	--	--	--	--	--	--
Avg	33086	--	--	--	--	--	--
SDev	556.4930	--	--	--	--	--	--
XRSD	1.681934	--	--	--	--	--	--
#1	33480	--	--	--	--	--	--
#2	32693	--	--	--	--	--	--

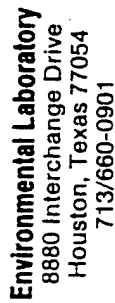
Method: ENVIR094 Sample Name: CCV3 Operator: DQ
 Run Time: 06/14/94 15:41:50
 Comment:
 Mode: CONC Corr. Factor: 1

Elem	Ag3280	Al3082	As1936	Ba4934	Be3130	Ca3179	Cd2208
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.845	9.651	10.34	10.04	10.06	9.828	9.830
SDev	.003	.027	.04	.01	.00	.023	.025
XRSD	.1509	.2802	.3873	.0900	.0182	.2311	.2547



APPENDIX F
CHAIN-OF-CUSTODY

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Analysis Request and Chain of Custody Record

Project No.		Client/Project Name		Project Location				
1308-191		OPERATIONAL TECHNOLOGIES Corp.		ZANESVILLE ANG-S, OHIO				
Field Sample No./ Identification	Date and Time	Grab	Core	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
A-04 BH Int 1	6/2/94 1120	/		BRASS Sleeve (2)	SOIL	ICE	VOC / SVOC / TPH / METALS	
A-04 BH Int 2	6/2/94 1140	/		"	"	"	"	
A-05 BH Int 1	6/2/94 1315	/		"	"	"	"	
A-05 BH Int 2	6/2/94 1318	/		"	"	"	"	
A-06 BH Int 1	6/2/94 1350	/		"	"	"	"	
A-06 BH Int 2	6/2/94 1410	/		"	"	"	"	
A-07 BH Int 1	6/2/94 1500	/		"	"	"	"	
A-07 BH Int 2	6/2/94 1507	/		"	"	"	"	
A-03 BH Int 1	6/2/94 1550	/		"	"	"	"	
A-03 BH Int 2	6/2/94 1555	/		"	"	"	"	
Samplers: Earl Elsh I		Relinquished by: Earl Elsh I		Date: 6/2/94 Time: 1900 hrs		Received by: M. B... (Signature)		Date: 6/3/94 Time: 900
Earl E Preker II		Relinquished by:		Date:		Received by:		Date:
Affiliation		Relinquished by:		Date:		Received by:		Date:
		Relinquished by:		Date:		Received by:		Date:
		Relinquished by:		Date:		Received by:		Date:
SAMPLER REMARKS: VOC - SW 5030/ SW 8240 SVOC - SW 8270		TPH - CA Med 8015		Laboratory No. 006/3/94		Data Results to: Metals - SW Series		
Seal #								

EO 12950 E 9



Analysis Request and Chain of Custody Record

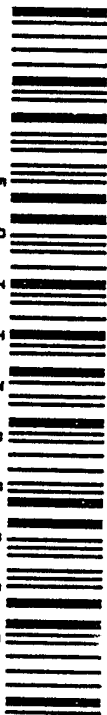
[illegible]

6305621103

ADDITIONAL

POSTAGE WILL BE PAID BY ADDRESSEE

5 3 0 5 5 2 1 1 0 3



2339H 6305621103

1342-6486-1

672794

9406119

210 731-0000

SAMPLE RECEIVING

(713) 660-0901

Operational Technology Corporation

SOUTHERN PETROLEUM LAB

1100 NW Loop 410 ST 230

San Antonio TX 78229

8880 INTERCHANGE

HOUSTON TX

ZIP Required 77054

IF HOLD FOR PICK-UP, Print FLDX Address Here

Street

City

State

ZIP Required

Region

Emp No

Date

Federal Express Use

Business

Business Changes

Street Address

Declared Value Charge

City

State

Other 1

Insured By

Other 2

Date Time Received

Total Charges

Signature

REVISION DATE 6/92

POSTAGE WILL BE PAID BY ADDRESSEE

USA, A, 2004

9406119

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 6/3 TIME: 10:00 CLIENT NO. _____
 LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: 9406119

- | | <u>YES</u> | <u>NO</u> |
|---|-----------------------|------------------------|
| 1. Is a Chain-of-Custody form present? | <u>✓</u> | |
| 2. Is the COC properly completed? | <u>✓</u> | |
| If no, describe what is incomplete: | | |
| _____ | | |
| _____ | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 3. Is airbill/packing list/bill of lading with shipment? | <u>✓</u> | |
| If yes, ID#: <u>By Fed Ex : L305621103</u> | | |
| 4. Is a USEPA Traffic Report present? | | <u>✓</u> |
| 5. Is a USEPA SAS Packing List present? | | <u>✓</u> |
| 6. Are custody seals present on the package? | <u>✓</u> | |
| If yes, were they intact upon receipt? | | |
| | <u>✓</u> | |
| 7. Are all samples tagged or labeled? | <u>✓</u> | |
| Do the sample tags/labels match the COC? | | |
| | <u>✓</u> | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 8. Do all shipping documents agree? | <u>✓</u> | |
| If no, describe what is in nonconformity: | | |
| _____ | | |
| _____ | | |
| 9. Condition/temperature of shipping container: | <u>INTACT 3°C</u> | |
| 10. Condition/temperature of sample bottles: | <u>GOOD 3°C</u> | |
| 11. Sample Disposal?: | SPL disposal <u>✓</u> | Return to client _____ |

NOTES (reference item number if applicable): _____

ATTEST: [Signature] DATE: 6/3/94
 DELIVERED FOR RESOLUTION: REC'D _____ DATE: _____
 RESOLVED: _____ DATE: _____

9406170

Page 1 of 1



Environmental Laboratory
 8880 Interchange Drive
 Houston, Texas 77054
 713/660-0901

Analysis Request and Chain of Custody Record

Project No.		Client/Project Name		Project Location		
1308-191		OPERATIONAL TECHNOLOGIES CORP		ZANESVILLE, OHIO		
Field Sample No./ Identification	Date and Time	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
B-003 BH Int 1	6/3/94 0815	Brass Slews (2)	SOIL	ICE	LEAD by Method SW.742.1	
B-003 BH Int 2	6/3/94 0825	"	"	"	"	
B-002 BH Int 1	6/3/94 0850	"	"	"	"	
B-002 BH Int 2	6/3/94 0905	"	"	"	"	
B-001 BH Int 1	6/3/94 0918	"	"	"	"	
B-001 BH Int 2	6/3/94 0930	"	"	"	"	
NOTHING		FOLLOWS		BELOW		
Sampers: (Signature)		Relinquished by: (Signature)		Date: 6/3/94 Time: 1118		Date: 6/3 Time: 1130
Earl E. Parker		Earl E. Parker		Federal Express		Intact
Earl E. Parker		Relinquished by: (Signature)		Date: Time:		Intact
Affiliation		Relinquished by: (Signature)		Date: Time:		Intact
		Relinquished by: (Signature)		Date: Time:		Intact
SAMPLER REMARKS:		6305621066		Received by: (Signature) Date: 6/3/94 Time: 1100		Laboratory No. 21071097
Seal #				Data Results to:		

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 00/00/94 TIME: 09:50 CLIENT NO. _____
 LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: 9400170

- | | <u>YES</u> | <u>NO</u> |
|---|------------|------------------------|
| 1. Is a Chain-of-Custody form present? | <u>✓</u> | _____ |
| 2. Is the COC properly completed? | <u>✓</u> | _____ |
| If no, describe what is incomplete: | | |
| _____ | | |
| _____ | | |
| _____ | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 3. Is airbill/packing list/bill of lading with shipment? | <u>✓</u> | _____ |
| If yes, ID#: <u>FED EX 10305621000</u> | | |
| 4. Is a USEPA Traffic Report present? | _____ | <u>✓</u> |
| 5. Is a USEPA SAS Packing List present? | _____ | <u>✓</u> |
| 6. Are custody seals present on the package? | <u>✓</u> | _____ |
| If yes, were they intact upon receipt? | | |
| _____ | | |
| 7. Are all samples tagged or labeled? | <u>✓</u> | _____ |
| Do the sample tags/labels match the COC? | | |
| _____ | | |
| If no, has the client been contacted about it? | | |
| (Attach subsequent documentation from client about the situation) | | |
| 8. Do all shipping documents agree? | <u>✓</u> | _____ |
| If no, describe what is in nonconformity: | | |
| _____ | | |
| _____ | | |
| 9. Condition/temperature of shipping container: | <u>3</u> | <u>INTACT</u> |
| 10. Condition/temperature of sample bottles: | <u>3</u> | <u>INTACT</u> |
| 11. Sample Disposal?: | <u>✓</u> | Return to client _____ |
| SPL disposal _____ | | |

NOTES (reference item number if applicable): _____

ATTEST: Kath Linsell DATE: 00/00/94
 DELIVERED FOR RESOLUTION: REC'D DATE: _____
 RESOLVED: _____ DATE: _____

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.105
0.257
ZAA
0.003
-0.003
P
0.100
0.100

READ: -2.1

MEAN= -1.6 STD.DEV.=

COEF.VAR.= 40.43 %

SE 0011

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.184
0.476
ZAA
0.022
0.024
P
0.120
0.120

READ: 6.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.176
0.459
ZAA
0.025
0.020
P
0.160
0.160

READ: 5.2

MEAN= 5.8 STD.DEV.=

COEF.VAR.= 16.07 %

SE 0012

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.128
0.330
ZAA
0.010
0.003
P
0.120
0.120

READ: -0.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.112
0.298
ZAA
0.008
0.003
P
0.110
0.110

READ: -2.2

MEAN= -1.3 STD.DEV.=

COEF.VAR.= 96.60 %

SE 0013

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.107
0.286
ZAA
0.015
-0.003
P
0.100
0.100

READ: -2.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.094
0.245
ZAA
0.011
-0.002
P
0.090
0.090

READ: -2.2

MEAN= -2.3 STD.DEV.=

COEF.VAR.= 9.99 %

PEAD: -1.8

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.046
0.082

AA
0.046
0.082

PEAD: -1.6

MEAN= -1.7 STD.DEV.=

COEF.VAR.= 5.88

SEE 0.015

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.121
0.226

AA
0.121
0.226

PEAD: -0.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.114
0.226

AA
0.114
0.226

PEAD: -3.1

MEAN= -1.7 STD.DEV.=

COEF.VAR.= 99.99

SEE 0.015

PEAD: -3.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.103
0.247

AA
0.103
0.247

PEAD: -0.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.097
0.244

AA
0.097
0.244

PEAD: -1.7

MEAN= -1.7 STD.DEV.=

COEF.VAR.= 99.99

SEE 0.015

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.098
0.228

AA
0.098
0.228

PEAD: -1.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.092
0.223

AA
0.092
0.223

PEAD: -3.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.123
0.333

ZAA
0.015
0.004

READ: -0.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.128
0.310

ZAA
0.012
-0.006

READ: -3.4

MEAN= -1.7 STD. DEV.=

COEF. VAR.= 93.99

SEE 0019

-100

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.343
0.237

ZAA
0.272
0.154

READ: 49.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.338
0.220

ZAA
0.292
0.167

READ: 53.5

Cell

MEAN= 51.4 STD. DEV.=

COEF. VAR.= 5.90

SEE 0020

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.012
0.015

ZAA
0.012
0.005

READ: 0.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.013
0.013

ZAA
0.011
0.005

READ: -2.9

MEAN= -1.2 STD. DEV.=

COEF. VAR.= 93.99

SEE 0021

Cell

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.121
0.456

ZAA
0.032
0.022

READ: 5.8

PEAK HEIGHT (ABSORBANCE)

AA

ZAA

MEAN= 5.8 STD.DEV.= COEF.VAR.= 1.53 /

SEE 0022

PEAK HEIGHT (ABSORBANCE) AA 0.076 ZAA 0.012
PEAK AREA (ABS-SECONDS) 0.150 -0.002

READ: -2.0

PEAK HEIGHT (ABSORBANCE) AA 0.072 ZAA 0.015
PEAK AREA (ABS-SECONDS) 0.144 -0.002

READ: -2.1

MEAN= -2.1 STD.DEV.= COEF.VAR.= 1.29 /

SEE 0023

PEAK HEIGHT (ABSORBANCE) AA 0.074 ZAA 0.013
PEAK AREA (ABS-SECONDS) 0.134 0.001

READ: -1.2

PEAK HEIGHT (ABSORBANCE) AA 0.077 ZAA 0.017
PEAK AREA (ABS-SECONDS) 0.139 0.009

READ: 1.5

MEAN= 0.2 STD.DEV.= COEF.VAR.= 99.90 /

SEE 0024

PEAK HEIGHT (ABSORBANCE) AA 0.115 ZAA 0.010
PEAK AREA (ABS-SECONDS) 0.231 -0.002

READ: -2.1

PEAK HEIGHT (ABSORBANCE) AA 0.119 ZAA 0.012
PEAK AREA (ABS-SECONDS) 0.308 0.006

READ: 0.6

MEAN= -0.7 STD.DEV.= COEF.VAR.= 99.99 /

SEE 0025

PEAK HEIGHT (ABSORBANCE) AA 0.099 ZAA 0.016
PEAK AREA (ABS-SECONDS) 0.032 0.009

READ: 1.1

06220-18

READ: -1.0

MEAN= -0.2 STD.DEV.=

COEF.VAR.= 99.997

SEE 0026

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.024
0.040
ZAA 0.016
0.003

BC 0.006
0.000

READ: -0.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.029
0.043
ZAA 0.013
0.005

BC 0.003
0.000

READ: 0.4

MEAN= 0.0 STD.DEV.=

COEF.VAR.= 99.997

SEE 0027

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.199
0.152
ZAA 0.162
0.065

BC 0.042
0.067

READ: 26.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.201
0.161
ZAA 0.130
0.096

BC 0.049
0.067

READ: 30.0

MEAN= 28.2 STD.DEV.=

COEF.VAR.= 8.94

SEE 0028

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.190
0.153
ZAA 0.160
0.031

BC 0.042
0.067

READ: 29.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.196
0.156
ZAA 0.153
0.031

BC 0.041
0.067

READ: 29.7

MEAN= 28.6 STD.DEV.=

COEF.VAR.= 6.54

SEE 0029

PEAK HEIGHT (ABSORBANCE)

AA

ZAA

BC

-2D burst

-2D

PEAK HEIGHT (ABSORBEANCE) AA 0.049 ZAA 0.020 PC 0.012
 PFAK AREA (ABS-SECONDS) 0.073 0.000 0.003
 READ: -1.4
 MEAN= -0.1 STD.DEV.= COEF.VAR.= 99.99 %

 SEE 0030

06221-13

PEAK HEIGHT (ABSORBEANCE) AA 0.142 ZAA 0.011 PC 0.142
 PFAK AREA (ABS-SECONDS) 0.305 -0.003 0.003
 READ: -2.3

PEAK HEIGHT (ABSORBEANCE) AA 0.142 ZAA 0.015 PC 0.142
 PFAK AREA (ABS-SECONDS) 0.306 -0.006 0.006
 READ: -3.4
 MEAN= -2.8 STD.DEV.= COEF.VAR.= 29.55 %

 SEE 0031

-28

PEAK HEIGHT (ABSORBEANCE) AA 0.024 ZAA 0.016 PC 0.024
 PFAK AREA (ABS-SECONDS) 0.150 0.001 0.159
 READ: -0.9

PEAK HEIGHT (ABSORBEANCE) AA 0.069 ZAA 0.013 PC 0.069
 PFAK AREA (ABS-SECONDS) 0.116 -0.002 0.116
 READ: -2.0
 MEAN= -1.5 STD.DEV.= COEF.VAR.= 53.34 %

 SEE 0032

-38

PEAK HEIGHT (ABSORBEANCE) AA 0.020 ZAA 0.015 PC 0.020
 PFAK AREA (ABS-SECONDS) 0.036 -0.004 0.036
 READ: -2.7

PEAK HEIGHT (ABSORBEANCE) AA 0.022 ZAA 0.013 PC 0.022
 PFAK AREA (ABS-SECONDS) 0.023 -0.006 0.023
 READ: -3.5
 MEAN= -3.1 STD.DEV.= COEF.VAR.= 15.01 %

 SEE 0033

-48

READ: 56.9

SEE 0033

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.018
0.021
ZAA 0.012
0.004
EG 0.011
0.017

READ: 0.0

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.013
0.015
ZAA 0.010
0.002
EG 0.011
0.017

READ: -2.0

MEAN= 1.0 STD.DEV.=

COEF. VAR. = 99.99

SEE 0034

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.410
0.262
ZAA 0.236
0.195
EG 0.001
0.002

READ: 62.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.398
0.267
ZAA 0.326
0.203
EG 0.001
0.002

READ: 65.2

MEAN= 64.1 STD.DEV.=

COEF. VAR. = 2.58

SEE 0035

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.307
0.229
ZAA 0.252
0.167
EG 0.001
0.002

READ: 53.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.238
0.196
ZAA 0.232
0.143
EG 0.001
0.002

READ: 45.5

MEAN= 49.5 STD.DEV.=

COEF. VAR. = 11.92

SEE 0036

PEAK HEIGHT (ABSORBANCE)

AA 0.014
0.013
ZAA 0.012
0.007
EG 0.001
0.002

PEAK AREA (ABS-SECONDS)

READ: 0.9

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.016
0.013
ZAA 0.014
0.008
EG 0.001
0.002

SE 0037

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.058
0.092
ZAA 0.016
0.005
EG 0.057
0.007

PEAD: 0.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.061
0.058
ZAA 0.013
0.004
EG 0.059
0.007

READ: 2.6

MEAN= -1.1 STD.DEV.=

COEF.VAR.= 99.99

SE 0038

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.202
0.172
ZAA 0.161
0.084
EG 0.046
0.006

PEAD: 20.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.185
0.164
ZAA 0.143
0.082
EG 0.047
0.001

READ: 25.7

MEAN= 26.0 STD.DEV.=

COEF.VAR.= 1.70

SE 0039

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.177
0.162
ZAA 0.143
0.095
EG 0.047
0.006

PEAD: 26.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.175
0.150
ZAA 0.143
0.090
EG 0.047
0.006

READ: 30.1

MEAN= 28.4 STD.DEV.=

COEF.VAR.= 0.70

SE 0040

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.013
0.011
ZAA 0.011
0.006
EG 0.009
0.007

PEAD: 0.6

PBS-101

MEAN= -0.1 STD.DEV.= COEF.VAR.= 99.99 %

SE 0041

PEAK HEIGHT (ABSORBANCE) AA 0.199 ZAA 0.164 EC 0.042
PEAK AREA (ABS-SECONDS) 0.151 0.111 0.059

READ: 35.2

PEAK HEIGHT (ABSORBANCE) AA 0.210 ZAA 0.173 EC 0.050
PEAK AREA (ABS-SECONDS) 0.185 0.109 0.054

READ: 34.2

MEAN= 34.8 STD.DEV.= COEF.VAR.= 1.84 %

SE 0042

PEAK HEIGHT (ABSORBANCE) AA 0.072 ZAA 0.014 EC 0.002
PEAK AREA (ABS-SECONDS) 0.194 0.003 0.002

READ: -2.3

PEAK HEIGHT (ABSORBANCE) AA 0.079 ZAA 0.016 EC 0.072
PEAK AREA (ABS-SECONDS) 0.200 0.004 0.002

READ: 0.1

MEAN= -1.2 STD.DEV.= COEF.VAR.= 99.99 %

SE 0043

PEAK HEIGHT (ABSORBANCE) AA 0.168 ZAA 0.019 EC 0.152
PEAK AREA (ABS-SECONDS) 0.405 0.009 0.002

READ: 1.6

PEAK HEIGHT (ABSORBANCE) AA 0.166 ZAA 0.019 EC 0.052
PEAK AREA (ABS-SECONDS) 0.425 0.009 0.002

READ: 1.2

MEAN= 1.4 STD.DEV.= COEF.VAR.= 17.43 %

SE 0044

PEAK HEIGHT (ABSORBANCE) AA 0.263 ZAA 0.013 EC 0.259
PEAK AREA (ABS-SECONDS) 0.639 0.002 0.002

READ: -2.1

PEAK HEIGHT (ABSORBANCE) AA 0.259 ZAA 0.019 EC 0.259
PEAK AREA (ABS-SECONDS) 0.630 0.002 0.002

READ: -7.0

06415-1B

-2B

-3B

SEE 0045

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.134
1.999
TAA
0.023
0.009
P
1.000
0.000

READ: -4.8

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
1.177
2.146
TAA
0.017
0.009
P
1.100
0.000

06112-7c

MEAN= -4.2 STD.DEV.=

COEF.VAR.= 1.71

SEE 0046

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.308
0.320
TAA
0.012
0.001
P
0.100
0.000

READ: -1.8

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.101
0.271
TAA
0.013
0.001
P
0.100
0.000

06251-19

MEAN= -1.4 STD.DEV.=

COEF.VAR.= 48.57

SEE 0047

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.052
0.023
TAA
0.012
0.001
P
0.100
0.000

READ: -1.8

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.014
0.004
TAA
0.003
0.000
P
0.100
0.000

PB 6/1000

READ: -1.4

MEAN= -1.6 STD.DEV.=

COEF.VAR.= 19.25

SEE 0048

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.226
0.154
TAA
0.123
0.108
P
0.000
0.000

READ: 34.0

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.225
0.158
TAA
0.124
0.113
P
0.000
0.000

PBS

SE 0049

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.040
0.079
ZAA 0.018
0.005

PC 0.000
0.000

PEAD: 0.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.033
0.075
ZAA 0.013
0.001

PC 0.000
0.000

PEAD: 0.0

MEAN= 0.1 STD.DEV.=

COEF.VAR.= 99.99

SE 0050

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.194
0.152
ZAA 0.130
0.031

PC 0.000
0.000

PEAD: 25.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.136
0.170
ZAA 0.139
0.037

PC 0.000
0.000

PEAD: 27.1

MEAN= 26.1 STD.DEV.=

COEF.VAR.= 9.35

SE 0051

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.191
0.163
ZAA 0.132
0.031

PC 0.000
0.000

PEAD: 25.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.190
0.172
ZAA 0.135
0.035

PC 0.000
0.000

PEAD: 26.5

MEAN= 25.9 STD.DEV.=

COEF.VAR.= 3.34

SE 0052

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.016
0.012
ZAA 0.010
0.004

PC 0.000
0.000

PEAD: -2.7

06488-10 (R. n. G.)

-Ac Spf

-Ac Spf

MEAN= -2.7 STD.DEV.= 0.06
 COEF.VAR.= 0.06
 SE 0053

PEAK HEIGHT (ABSORBANCE) AA 0.394
 PEAK AREA (ABS-SECONDS) 0.1251
 READ: 63.4

PEAK HEIGHT (ABSORBANCE) ZAA 0.323
 PEAK AREA (ABS-SECONDS) 0.137
 READ: 63.9
 MEAN= 63.7 STD.DEV.= 0.49
 SE 0054

PEAK HEIGHT (ABSORBANCE) AA 0.256
 PEAK AREA (ABS-SECONDS) 0.471
 READ: 29.4

PEAK HEIGHT (ABSORBANCE) AA 0.230
 PEAK AREA (ABS-SECONDS) 0.518
 READ: 34.6
 MEAN= 32.0 STD.DEV.= 11.61
 SE 0055

PEAK HEIGHT (ABSORBANCE) AA 0.206
 PEAK AREA (ABS-SECONDS) 0.432
 READ: 30.9

PEAK HEIGHT (ABSORBANCE) AA 0.200
 PEAK AREA (ABS-SECONDS) 0.423
 READ: 29.2
 MEAN= 30.0 STD.DEV.= 8.91
 SE 0056

PEAK HEIGHT (ABSORBANCE) AA 0.221
 PEAK AREA (ABS-SECONDS) 0.479
 READ: 30.0

PEAK HEIGHT (ABSORBANCE) AA 0.143
 PEAK AREA (ABS-SECONDS) 0.614
 READ: 30.0

63.7 (20) (100)
 12.1.4
 12.2.0
 = 104.4%

Note - samples were analyzed in duplicate
 AA per 1000 in 1000
 06062-1B

1B pup

1B

PEAK AREA (ABS-SECONDS) 0.503 0.105

READ: 30.0

MEAN= 31.2 STD. DEV.= COEF. VAR.= 9.05

SE 0057

PEAK HEIGHT (ABSORBANCE) AA ZAA BC

PEAK AREA (ABS-SECONDS) 0.333 0.147 0.290

0.729 0.090 0.333

READ: 28.2

PEAK HEIGHT (ABSORBANCE) AA ZAA BC

0.340 0.100 0.333

PEAK AREA (ABS-SECONDS) 0.766 0.092 0.673

READ: 28.3

MEAN= 28.5 STD. DEV.= COEF. VAR.= 1.66

SE 0058

PEAK HEIGHT (ABSORBANCE) AA ZAA BC

PEAK AREA (ABS-SECONDS) 0.254 0.194 0.171

0.517 0.151 0.307

READ: 48.4

PEAK HEIGHT (ABSORBANCE) AA ZAA BC

PEAK AREA (ABS-SECONDS) 0.262 0.202 0.197

0.481 0.159 0.323

READ: 50.4

MEAN= 49.4 STD. DEV.= COEF. VAR.= 2.84

SE 0059

PEAK HEIGHT (ABSORBANCE) AA ZAA BC

PEAK AREA (ABS-SECONDS) 0.261 0.200 0.110

0.483 0.161 0.323

READ: 51.5

PEAK HEIGHT (ABSORBANCE) AA ZAA BC

PEAK AREA (ABS-SECONDS) 0.263 0.207 0.100

0.479 0.161 0.333

READ: 51.6

MEAN= 51.5 STD. DEV.= COEF. VAR.= 0.17

SE 0060

PC
9.726
0.000

ZAA
0.341
0.250

AA
0.300
0.503

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

-3B 57k

READ: 93.2

COEF. VAR. = 9.53

MEAN= 78.0 STD. DEV. =

SEE 0061

PC
9.726
0.000

ZAA
0.294
0.214

AA
0.269
0.423

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

READ: 69.2

PC
9.726
0.000

ZAA
0.230
0.254

AA
0.274
0.537

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

READ: 90.2

-3B dup 57k

COEF. VAR. = 19.77

MEAN= 79.2 STD. DEV. =

SEE 0062

PC
9.726
0.000

ZAA
0.128
0.100

AA
0.150
0.137

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

READ: 31.5

See Rapsody cup

PC
9.726
0.000

ZAA
0.106
0.601

AA
0.127
0.105

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

READ: 25.2

COEF. VAR. = 15.00

MEAN= 28.4 STD. DEV. =

SEE 0063

PC
9.726
0.000

ZAA
0.012
0.005

AA
0.015
0.020

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

READ: 0.2

PC
9.726
0.000

ZAA
0.013
0.000

AA
0.010
0.000

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

READ: -1.6

PB 60.64

COEF. VAR. = 99.99

MEAN= -0.7 STD. DEV. =

SEE 0064

PC
9.726
0.000

ZAA
0.000
0.000

AA
0.000
0.000

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (AES-SECONDS)

$(20.1 \times 100) = 116.6$
 $\frac{116.6}{1000.02} = 0.1166$
 $\frac{0.1166}{0.175} = 0.666$
 PB5 20X = 95.7

PEAK HEIGHT (ABSORBEANCE)
 PEAK AREA (ABS-SECONDS)

READ: 56.3
 MEAN= 58.4
 STD.DEV.=
 STE 006.4

COEF. VAR. = 5.29

PEAK HEIGHT (ABSORBEANCE)
 PEAK AREA (ABS-SECONDS)

READ: 50.6

PEAK HEIGHT (ABSORBEANCE)
 PEAK AREA (ABS-SECONDS)

READ: 49.9

COEF. VAR. = 1.00

PEAK HEIGHT (ABSORBEANCE)
 PEAK AREA (ABS-SECONDS)

READ: -0.2

PEAK HEIGHT (ABSORBEANCE)
 PEAK AREA (ABS-SECONDS)

READ: -0.6

COEF. VAR. = 60.12

Software Version: 3.2 <16C20>

Sample Name : 750 PPM

Sample Number: TC ;S

Operator : SEG

Time : 06/15/94 10:57

Study : DIESEL

Instrument : VARC

Channel : A A/D mV Range : 10000

AutoSampler : NONE

Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/15/94 09:25

Delay Time : 1.00 min.

End Time : 34.66 min.

Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\DATA\TCHROM\PEST\VARC\C__111.raw

Result File : C:\DOS\rst1421.rst

Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C\ins

Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C\prc

Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C\smf

Sequence File : <none>

Inj. Volume : 1 ul

Area Reject : 100.00

Sample Amount : 1.0000

Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	4.899	1205913.75	145375.44	BV	1.0000e6	0.0415	921.7238	0.0000
2	5.227	356389.06	41796.38	VV	9.9999e5	0.0415	921.7238	0.0000
3	5.399	210046.25	26948.03	VV	1.0000e6	0.0415	921.7238	0.0000
4	5.590	155732.03	26718.29	VV	1.0000e6	0.0415	921.7238	0.0000
5	5.748	549653.25	63896.97	VV	1.0000e6	0.0415	921.7238	0.0000
6	5.898	705699.50	90372.31	VV	1.0000e6	0.0415	921.7238	0.0000
7	5.980	414955.84	89301.56	VV	1.0000e6	0.0415	921.7238	0.0000
8	6.077	539261.56	80582.56	VV	9.9999e5	0.0415	921.7238	0.0000
9	6.302	687597.94	112836.10	VV	1.0000e6	0.0415	921.7238	0.0000
10	6.486	2902479.00	382432.00	VV	1.0000e6	0.0415	921.7238	0.0000
11	6.658	2588578.50	259541.95	VV	1.0000e6	0.0415	921.7238	0.0000
12	6.940	1184738.75	146585.02	VV	1.0000e6	0.0415	921.7238	0.0000
13	7.230	2887564.00	305618.03	VV	1.0000e6	0.0415	921.7238	0.0000
14	7.322	2631850.50	324244.22	VV	1.0000e6	0.0415	921.7238	0.0000
15	7.524	1718455.00	280743.72	VV	1.0000e6	0.0415	921.7238	0.0000
16	7.622	3393005.00	667751.63	VV	1.0000e6	0.0415	921.7238	0.0000
17	7.796	5161113.50	464507.94	VV	1.0000e6	0.0415	921.7238	0.0000
18	8.036	2213168.25	313228.97	VV	1.0000e6	0.0415	921.7238	0.0000
19	8.135	1122619.50	286029.59	VV	1.0000e6	0.0415	921.7238	0.0000
20	8.236	2182546.25	331541.25	VV	1.0000e6	0.0415	921.7238	0.0000
21	8.346	3086380.50	451288.19	VV	1.0000e6	0.0415	921.7238	0.0000
22	8.569	8067854.50	1.04e6	VV	9.9999e5	0.0415	921.7238	0.0000
23	8.753	5760176.00	603613.50	VV	9.9999e5	0.0415	921.7238	0.0000
24	8.974	4296996.00	565245.50	VV	1.0000e6	0.0415	921.7238	0.0000
25	9.098	7461517.00	699908.69	VV	1.0000e6	0.0415	921.7238	0.0000
26	9.412	11189220.00	1.31e6	VV	9.9999e5	0.0415	921.7238	0.0000
27	9.674	4295712.00	508052.81	VV	1.0000e6	0.0415	921.7238	0.0000
28	9.815	4878618.50	704461.56	VV	9.9999e5	0.0415	921.7238	0.0000
29	9.921	5149599.50	627419.69	VV	1.0000e6	0.0415	921.7238	0.0000
30	10.195	12794202.00	1.50e6	VV	1.0000e6	0.0415	921.7238	0.0000
31	10.389	3785313.00	485801.09	VV	1.0000e6	0.0415	921.7238	0.0000
32	10.554	11247696.00	869843.75	VV	1.0000e6	0.0415	921.7238	0.0000
33	10.935	17482346.00	1.67e6	VV	1.0000e6	0.0415	921.7238	0.0000
34	11.344	11415711.00	624322.94	VV	9.9999e5	0.0415	921.7238	0.0000
35	11.624	11222217.00	1.29e6	VV	1.0000e6	0.0415	921.7238	0.0000
36	11.890	6447271.00	535728.75	VV	1.0000e6	0.0415	921.7238	0.0000
37	12.034	5237693.00	521330.91	VV	1.0000e6	0.0415	921.7238	0.0000
38	12.277	10769700.00	1.04e6	VV	1.0000e6	0.0415	921.7238	0.0000
39	12.548	3286696.00	434240.28	VV	1.0000e6	0.0415	921.7238	0.0000
40	12.593	4562290.50	412720.31	VV	9.9999e5	0.0415	921.7238	0.0000
41	12.905	7240715.50	780308.88	VV	1.0000e6	0.0415	921.7238	0.0000
42	13.152	2333313.75	297759.31	VV	1.0000e6	0.0415	921.7238	0.0000
43	13.338	3383217.50	308030.78	VV	1.0000e6	0.0415	921.7238	0.0000
44	13.512	3814668.50	479878.13	VV	1.0000e6	0.0415	921.7238	0.0000
45	13.717	2286647.75	191211.97	VV	1.0000e6	0.0415	921.7238	0.0000
46	13.923	1386158.38	166850.73	VV	1.0000e6	0.0415	921.7238	0.0000
47	14.090	2269027.75	272925.66	VV	1.0000e6	0.0415	921.7238	0.0000
48	14.285	766731.69	96900.66	VV	1.0000e6	0.0415	921.7238	0.0000
49	14.433	683709.00	76215.35	VV	9.9999e5	0.0415	921.7238	0.0000
50	14.643	1139079.38	112523.82	VV	1.0000e6	0.0415	921.7238	0.0000

105%

RF 0.63744

21065.92

51	15.185	144885.58	30448.78 VB	9.9999e5	0.0415	921.7238	0.0000
52	15.686	10340864.00	2.09e6 BB	1.0000e6	0.0415	921.7238	0.0000
53	17.846	32244.92	2866.12 BB	1.0000e6	0.0415	921.7238	0.0000
54	18.569	527031.63	17289.76 BV	1.0000e6	0.0415	921.7238	0.0000
55	19.165	341316.56	5882.52 VV	1.0000e6	0.0415	921.7238	0.0000
56	19.262	3534.02	1146.44 VB	1.0000e6	0.0415	921.7238	0.0000

	2.21e8	2.52e7		2.3257	51616.5234	0.0000	

=====
END
=====

Chromatogram

Sample Name : 750 PPM

FileName : L:\DATA\TCHROM\PEST\VARC\C___111.raw

Method : DIESEL.C.ins

Start Time : 1.00 min

Scale Factor: 1

End Time : 34.66 min

Plot Offset: -137 mV

Sample #: TC ;S

Date : 06/15/94 10:57

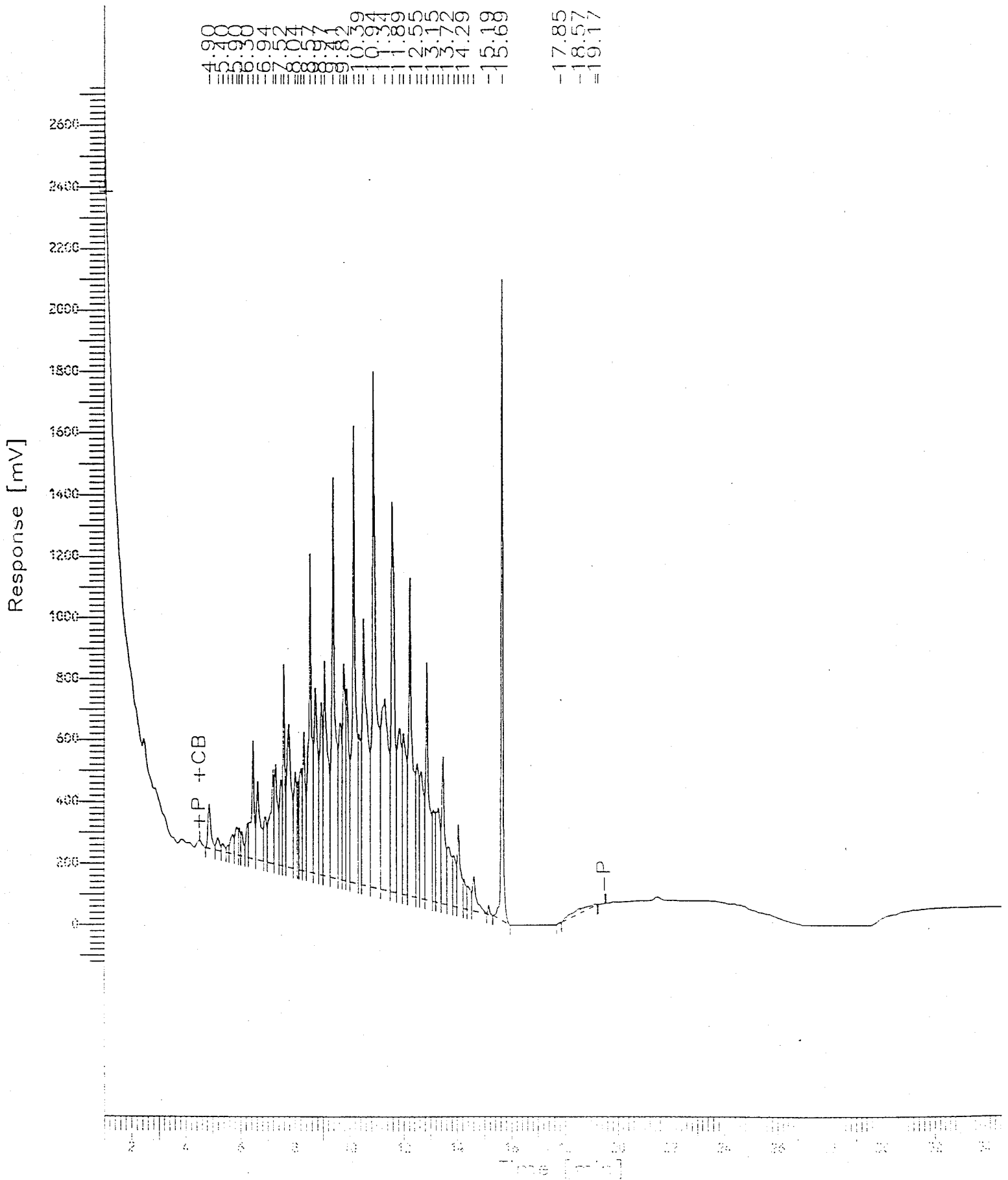
Time of Injection: 06/15/94 09:25

Low Point : -136.71 mV

Plot Scale: 2871 mV

Page 1 of 1

High Point : 2734.44 mV



Software Version: 3.2 <16C20>
Sample Name : 9406119-14MS Time : 06/15/94 13:48
Sample Number: KM ;S Study : MODSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/15/94 13:14
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__115.raw
Result File : l:\data\tchrom\pest\varc\C__115.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	4.859	5478092.00	698457.63	BV	9.9999e5	0.0415	2865.3762	0.0000
2	5.193	1596473.75	166704.36	VV	1.0000e6	0.0415	2865.3762	0.0000
3	5.400	767461.25	98603.01	VV	1.0000e6	0.0415	2865.3762	0.0000
4	5.535	1225442.13	188118.14	VV	9.9999e5	0.0415	2865.3762	0.0000
5	5.684	2242634.25	279313.09	VV	1.0000e6	0.0415	2865.3762	0.0000
6	5.855	3426920.25	438666.72	VV	1.0000e6	0.0415	2865.3762	0.0000
7	5.968	3218772.75	341699.28	VV	1.0000e6	0.0415	2865.3762	0.0000
8	6.257	3451021.25	473888.00	VV	1.0000e6	0.0415	2865.3762	0.0000
9	6.467	10240818.00	1.57e6	VV	1.0000e6	0.0415	2865.3762	0.0000
10	6.641	7768755.50	806131.63	VV	1.0000e6	0.0415	2865.3762	0.0000
11	6.917	5104424.50	494914.34	VV	1.0000e6	0.0415	2865.3762	0.0000
12	7.037	1727072.50	446303.16	VV	1.0000e6	0.0415	2865.3762	0.0000
13	7.197	9415960.00	1.18e6	VV	9.9999e5	0.0415	2865.3762	0.0000
14	7.316	7575671.00	1.00e6	VV	1.0000e6	0.0415	2865.3762	0.0000
15	7.524	7193273.50	1.26e6	VV	1.0000e6	0.0415	2865.3762	0.0000
16	7.608	11814770.00	2.49e6	VV	1.0000e6	0.0415	2865.3762	0.0000
17	7.776	16707932.00	1.45e6	VV	1.0000e6	0.0415	2865.3762	0.0000
18	8.017	6154261.00	1.06e6	VV	1.0000e6	0.0415	2865.3762	0.0000
19	8.156	6429088.00	984406.94	VV	1.0000e6	0.0415	2865.3762	0.0000
20	8.332	16334787.00	1.46e6	VV	1.0000e6	0.0415	2865.3762	0.0000
21	8.559	28916380.00	3.68e6	VV	1.0000e6	0.0415	2865.3762	0.0000
22	8.721	17283988.00	2.24e6	VV	9.9999e5	0.0415	2865.3762	0.0000
23	8.962	14451465.00	1.70e6	VV	1.0000e6	0.0415	2865.3762	0.0000
24	9.091	22200052.00	2.14e6	VV	1.0000e6	0.0415	2865.3762	0.0000
25	9.403	34395120.00	4.63e6	VV	1.0000e6	0.0415	2865.3762	0.0000
26	9.646	17650398.00	1.74e6	VV	1.0000e6	0.0415	2865.3762	0.0000
27	9.806	15268307.00	2.25e6	VV	1.0000e6	0.0415	2865.3762	0.0000
28	9.914	14894230.00	2.05e6	VV	1.0000e6	0.0415	2865.3762	0.0000
29	10.187	42923620.00	5.21e6	VV	1.0000e6	0.0415	2865.3762	0.0000
30	10.377	11475896.00	1.49e6	VV	1.0000e6	0.0415	2865.3762	0.0000
31	10.551	34941736.00	2.83e6	VV	1.0000e6	0.0415	2865.3762	0.0000
32	10.928	49630144.00	5.59e6	VV	1.0000e6	0.0415	2865.3762	0.0000
33	11.242	16713671.00	1.85e6	VV	1.0000e6	0.0415	2865.3762	0.0000
34	11.326	20641016.00	1.94e6	VV	1.0000e6	0.0415	2865.3762	0.0000
35	11.617	41580260.00	4.31e6	VV	1.0000e6	0.0415	2865.3762	0.0000
36	11.893	17985632.00	1.61e6	VV	1.0000e6	0.0415	2865.3762	0.0000
37	12.029	15002282.00	1.71e6	VV	1.0000e6	0.0415	2865.3762	0.0000
38	12.270	37078128.00	3.54e6	VV	1.0000e6	0.0415	2865.3762	0.0000
39	12.534	9678454.00	1.29e6	VV	9.9999e5	0.0415	2865.3762	0.0000
40	12.674	9476456.00	1.25e6	VV	1.0000e6	0.0415	2865.3762	0.0000
41	12.899	27313394.00	2.55e6	VV	1.0000e6	0.0415	2865.3762	0.0000
42	13.151	7483918.50	1.00e6	VV	1.0000e6	0.0415	2865.3762	0.0000
43	13.342	10322936.00	944305.25	VV	1.0000e6	0.0415	2865.3762	0.0000
44	13.501	12082565.00	1.64e6	VV	1.0000e6	0.0415	2865.3762	0.0000
45	13.713	5696896.00	620868.06	VV	1.0000e6	0.0415	2865.3762	0.0000
46	13.916	5659774.50	554309.50	VV	1.0000e6	0.0415	2865.3762	0.0000
47	14.081	7399296.00	960595.44	VV	1.0000e6	0.0415	2865.3762	0.0000
48	14.278	2650038.00	324791.41	VV	1.0000e6	0.0415	2865.3762	0.0000
49	14.418	2619730.00	267086.16	VV	1.0000e6	0.0415	2865.3762	0.0000
50	14.640	3173489.00	393838.00	VV	1.0000e6	0.0415	2865.3762	0.0000

51	14.842	1732446.25	122347.40	VV	1.0000e6	0.0415	2865.3762	0.0000
52	15.180	1634440.00	145133.98	VV	1.0000e6	0.0415	2865.3762	0.0000
53	15.692	1681713.75	339272.84	VB	1.0000e6	0.0415	2865.3762	0.0000
54	15.950	28535.16	5951.40	BB	1.0000e6	0.0415	2865.3762	0.0000
55	16.201	40994.38	11269.59	BB	1.0000e6	0.0415	2865.3762	0.0000
56	16.691	33685.16	5968.62	BB	1.0000e6	0.0415	2865.3762	0.0000
57	16.997	6097.81	1739.58	BV	1.0000e6	0.0415	2865.3762	0.0000
58	17.165	15712.34	3331.48	VV	1.0000e6	0.0415	2865.3762	0.0000
59	17.380	25560.16	3666.97	VB	1.0000e6	0.0415	2865.3762	0.0000
60	17.617	12060.00	2258.83	BB	1.0000e6	0.0415	2865.3762	0.0000
61	17.799	370.00	164.39	BB	1.0000e6	0.0415	2865.3762	0.0000
62	17.985	48745.00	6974.97	BE	1.0000e6	0.0415	2865.3762	0.0000
63	18.215	1330.00	319.81	EB	1.0000e6	0.0415	2865.3762	0.0000
64	18.549	94899.38	11671.38	BV	9.9999e5	0.0415	2865.3762	0.0000
65	18.728	26072.97	3467.31	VV	9.9999e5	0.0415	2865.3762	0.0000
66	18.871	27899.22	3133.89	VV	1.0000e6	0.0415	2865.3762	0.0000
67	19.004	8375.90	2201.70	VV	1.0000e6	0.0415	2865.3762	0.0000
68	19.141	68872.58	7996.33	VE	1.0000e6	0.0415	2865.3762	0.0000
69	19.378	2530.00	799.01	EB	1.0000e6	0.0415	2865.3762	0.0000

	6.89e8	8.00e7			2.8656	1.9771e5	0.0000	

```
=====
END
=====
```

Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__115.TX0

Chromatogram

Sample #: KM ;S

Page 1 of 1

Date : 06/15/94 13:49

Time of Injection: 06/15/94 13:14

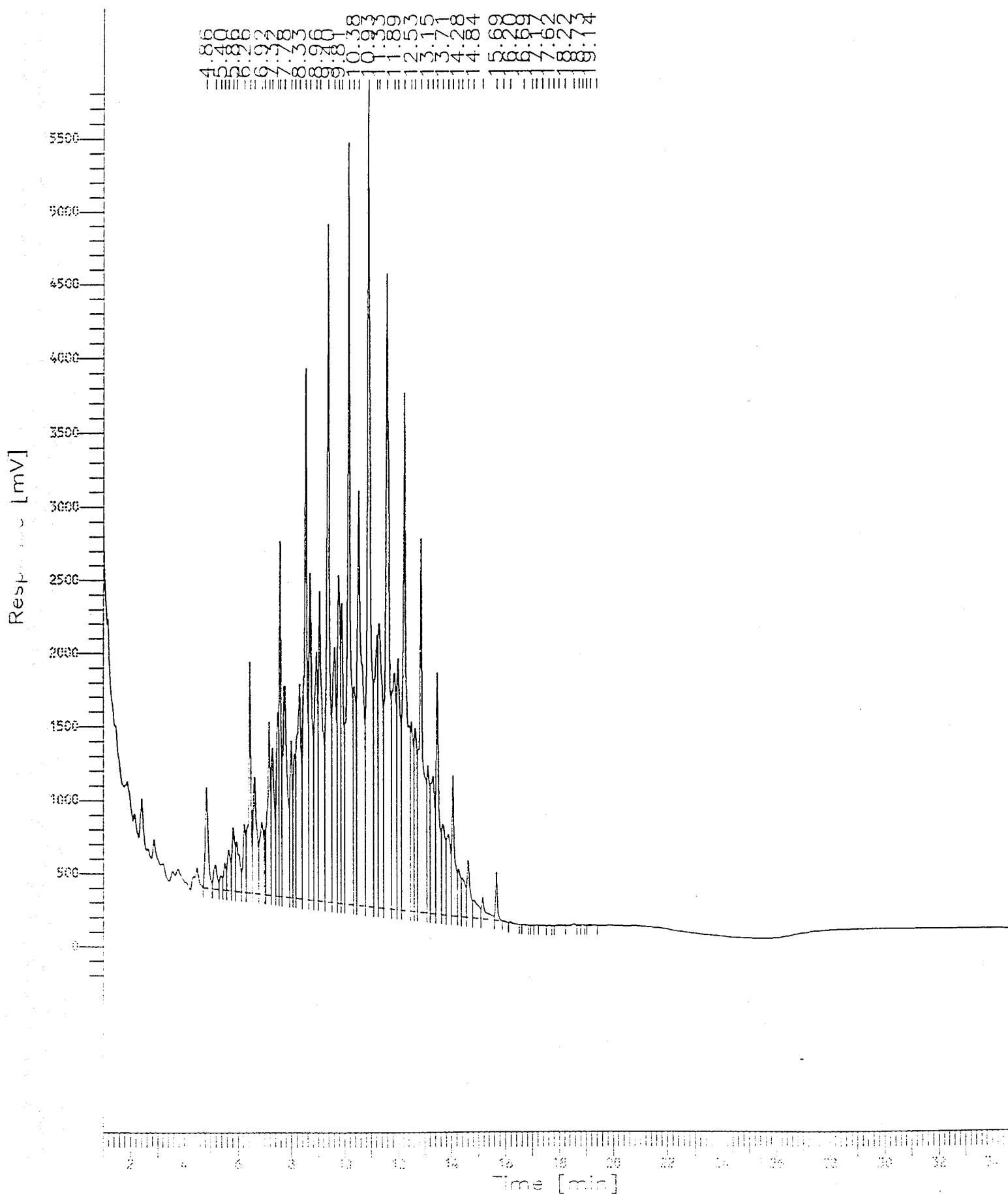
End Time : 34.66 min

Low Point : -242.56 mV

High Point : 5835.01 mV

Plot Offset: -243 mV

Plot Scale: 6078 mV



Software Version: 3.2 <16C20>
Sample Name : 375 PPM Time : 06/16/94 12:35
Sample Number: TC ;S Study : DIESEL
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/16/94 12:00
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__128.raw
Result File : l:\data\tchrom\pest\varc\C__128.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

=====

DIESEL Area Percent Report								
Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/ Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	4.947	16265.00	16093.69	BB	1.0000e6	0.0415	302.8079	0.0000
2	5.784	212018.75	4942.54	BB	1.0000e6	0.0415	302.8079	0.0000
3	6.391	158990.63	18312.63	BV	1.0000e6	0.0415	302.8079	0.0000
4	6.525	493065.00	92257.23	VV	1.0000e6	0.0415	302.8079	0.0000
5	6.686	439924.38	64786.25	VB	9.9999e5	0.0415	302.8079	0.0000
6	6.966	60380.00	13343.31	BB	1.0000e6	0.0415	302.8079	0.0000
7	7.156	63176.56	13847.55	BV	9.9999e5	0.0415	302.8079	0.0000
8	7.343	793042.50	86278.39	VV	1.0000e6	0.0415	302.8079	0.0000
9	7.556	325765.31	58833.18	VV	1.0000e6	0.0415	302.8079	0.0000
0	7.652	908559.38	183748.50	VV	1.0000e6	0.0415	302.8079	0.0000
11	7.836	1194410.00	133511.09	VV	1.0000e6	0.0415	302.8079	0.0000
12	8.069	434354.38	62514.65	VV	1.0000e6	0.0415	302.8079	0.0000
13	8.163	224737.34	58954.90	VV	1.0000e6	0.0415	302.8079	0.0000
14	8.268	413955.00	79033.13	VV	1.0000e6	0.0415	302.8079	0.0000
15	8.371	832695.63	128558.32	VV	1.0000e6	0.0415	302.8079	0.0000
16	8.598	2228142.50	332557.03	VV	1.0000e6	0.0415	302.8079	0.0000
17	8.800	1816117.50	178050.39	VV	1.0000e6	0.0415	302.8079	0.0000
18	9.006	1325057.75	175921.28	VV	1.0000e6	0.0415	302.8079	0.0000
19	9.124	2278578.00	232572.14	VV	1.0000e6	0.0415	302.8079	0.0000
20	9.442	3135224.00	481216.75	VV	9.9999e5	0.0415	302.8079	0.0000
21	9.596	526525.44	135230.50	VV	1.0000e6	0.0415	302.8079	0.0000
22	9.711	1140351.25	150968.16	VV	9.9999e5	0.0415	302.8079	0.0000
23	9.848	1598671.88	246887.05	VV	1.0000e6	0.0415	302.8079	0.0000
24	9.948	1918008.75	206972.42	VV	1.0000e6	0.0415	302.8079	0.0000
25	10.223	4385449.50	587802.88	VV	1.0000e6	0.0415	302.8079	0.0000
26	10.425	1184549.50	154394.45	VV	1.0000e6	0.0415	302.8079	0.0000
27	10.584	3662395.00	320606.53	VV	1.0000e6	0.0415	302.8079	0.0000
28	10.966	6420236.00	686921.88	VV	1.0000e6	0.0415	302.8079	0.0000
29	11.298	1374929.25	206573.06	VV	9.9999e5	0.0415	302.8079	0.0000
30	11.368	2411569.25	206146.27	VV	9.9999e5	0.0415	302.8079	0.0000
31	11.657	4398090.00	511099.03	VV	1.0000e6	0.0415	302.8079	0.0000
32	11.930	1645519.63	174835.77	VV	1.0000e6	0.0415	302.8079	0.0000
33	12.064	1856457.50	173135.69	VV	1.0000e6	0.0415	302.8079	0.0000
34	12.314	3717475.50	409647.56	VV	1.0000e6	0.0415	302.8079	0.0000
35	12.587	1148760.13	138001.09	VV	1.0000e6	0.0415	302.8079	0.0000
36	12.727	1433711.88	132711.16	VV	1.0000e6	0.0415	302.8079	0.0000
37	12.944	2356361.25	298646.72	VV	1.0000e6	0.0415	302.8079	0.0000
38	13.193	688066.38	89089.35	VV	1.0000e6	0.0415	302.8079	0.0000
39	13.304	351978.44	89397.24	VV	9.9999e5	0.0415	302.8079	0.0000
40	13.378	741272.31	97545.50	VV	1.0000e6	0.0415	302.8079	0.0000
41	13.550	1262480.25	182408.45	VV	1.0000e6	0.0415	302.8079	0.0000
42	13.754	592413.44	56022.07	VV	1.0000e6	0.0415	302.8079	0.0000
43	13.961	381001.25	47769.66	VV	9.9999e5	0.0415	302.8079	0.0000
44	14.132	716111.06	103686.21	VV	1.0000e6	0.0415	302.8079	0.0000
45	14.324	349437.19	25414.84	VV	1.0000e6	0.0415	302.8079	0.0000
46	14.690	285264.69	40512.13	VB	9.9999e5	0.0415	302.8079	0.0000
47	15.228	57829.69	13981.43	BB	1.0000e6	0.0415	302.8079	0.0000
48	15.730	8696110.00	1.95e6	BB	1.0000e6	0.0415	302.8079	0.0000
49	16.242	12650.00	3258.35	BB	1.0000e6	0.0415	302.8079	0.0000
50	16.723	38744.69	4152.57	BB	1.0000e6	0.0415	302.8079	0.0000

At = 357.12
95%

At = 357.12
95%

51	17.179	1130.00	601.44	BB	1.0000e6	0.0415	302.8079	0.0000
52	17.430	665.00	1050.20	BB	1.0000e6	0.0415	302.8079	0.0000
53	18.041	22406.88	3636.67	BV	1.0000e6	0.0415	302.8079	0.0000
54	18.268	4779.14	936.58	VV	1.0000e6	0.0415	302.8079	0.0000
55	18.390	9131.02	1305.64	VV	1.0000e6	0.0415	302.8079	0.0000
56	18.612	109175.94	7175.39	VV	1.0000e6	0.0415	302.8079	0.0000
57	19.211	58901.88	5730.13	VB	1.0000e6	0.0415	302.8079	0.0000

72913056.00	9.88e6	2.3672	17260.0469	0.0001
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=====
END
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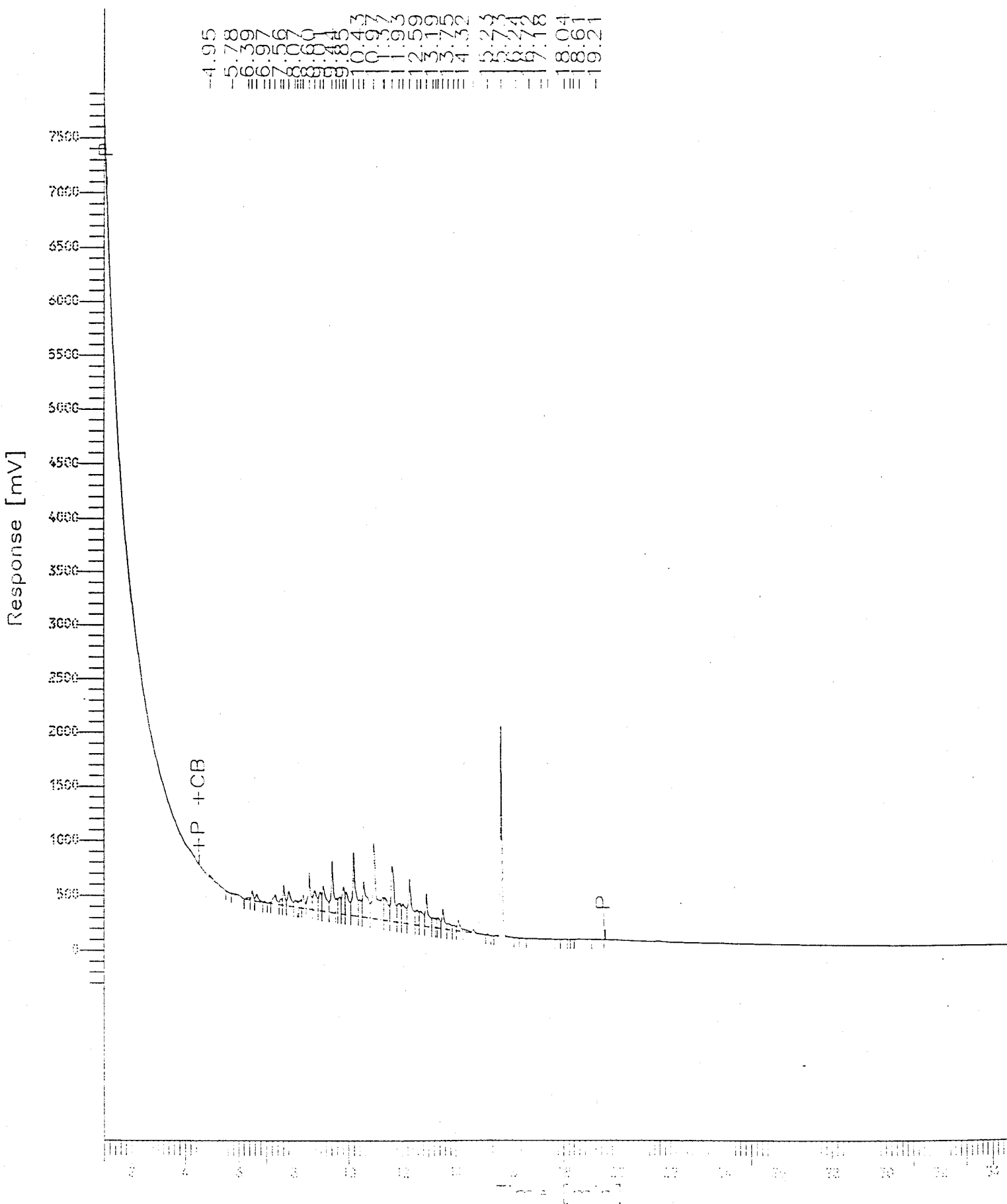
Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__128.TX0

Chromatogram

Sample Name : 375 PPM
 FileName : l:\data\tchrom\pest\varc\C__128.raw
 Method : DIESEL.C.ins
 Start Time : 1.00 min
 Scale Factor: 1

Sample #: TC ;S
 Date : 06/16/94 12:35
 Time of Injection: 06/16/94 12:00
 Low Point : -345.22 mV
 High Point : 7949.78 mV
 Plot Offset: -345 mV
 Plot Scale: 8295 mV

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Software Version: 3.2 <16C20>
Sample Name : 9406119-02B Time : 06/13/94 17:41
Sample Number: SC ;S Study : MODSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/13/94 17:06
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\data\tchrom\pest\varc\C__091.raw
Result File : L:\data\tchrom\pest\varc\C__091.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	6.027	20720.00	13021.03	BB	1.0000e6	0.0415	13.2786	0.0000
2	7.972	3625.00	994.65	BB	1.0000e6	0.0415	13.2786	0.0000
3	8.211	11358.59	1602.77	BV	1.0000e6	0.0415	13.2786	0.0000
4	8.443	26757.03	3487.41	VV	1.0000e6	0.0415	13.2786	0.0000
5	8.805	753434.38	21177.51	VV	1.0000e6	0.0415	13.2786	0.0000
6	9.461	214045.63	10665.29	VV	1.0000e6	0.0415	13.2786	0.0000
7	10.256	40586.25	4138.13	VV	9.9999e5	0.0415	13.2786	0.0000
8	10.614	3894.96	1161.10	VV	1.0000e6	0.0415	13.2786	0.0000
9	10.769	31174.38	4383.70	VB	1.0000e6	0.0415	13.2786	0.0000
10	11.026	1189.38	536.21	BV	1.0000e6	0.0415	13.2786	0.0000
11	11.584	11040.47	3130.17	VB	1.0000e6	0.0415	13.2786	0.0000
12	11.752	3323.05	828.24	BV	1.0000e6	0.0415	13.2786	0.0000
13	11.889	11843.13	3444.43	VV	1.0000e6	0.0415	13.2786	0.0000
14	12.262	5334.38	730.53	VB	1.0000e6	0.0415	13.2786	0.0000
15	12.863	205591.25	18483.04	BV	1.0000e6	0.0415	13.2786	0.0000
16	13.610	4320.39	784.38	VV	1.0000e6	0.0415	13.2786	0.0000
17	13.786	13213.44	2287.32	VB	1.0000e6	0.0415	13.2786	0.0000
18	14.202	13220.00	1918.90	BB	1.0000e6	0.0415	13.2786	0.0000
19	14.628	6583.67	1340.43	BV	1.0000e6	0.0415	13.2786	0.0000
20	14.742	11951.25	1832.28	VB	1.0000e6	0.0415	13.2786	0.0000
21	14.944	2430.00	536.13	BB	9.9999e5	0.0415	13.2786	0.0000
22	15.275	27080.00	3113.27	BB	1.0000e6	0.0415	13.2786	0.0000
23	15.768	1505925.13	271216.69	BE	9.9999e5	0.0415	13.2786	0.0000
24	16.270	19740.00	2740.98	EB	1.0000e6	0.0415	13.2786	0.0000
25	16.771	10060.08	1383.11	BB	9.9999e5	0.0415	13.2786	0.0000
26	17.227	9583.83	1389.10	BV	1.0000e6	0.0415	13.2786	0.0000
27	17.360	35681.09	4857.10	VB	9.9999e5	0.0415	13.2786	0.0000
28	17.684	4370.00	816.17	BB	9.9999e5	0.0415	13.2786	0.0000
29	18.068	26137.19	2858.14	BV	1.0000e6	0.0415	13.2786	0.0000
30	18.330	13584.06	1676.35	VV	1.0000e6	0.0415	13.2786	0.0000
31	18.406	4815.53	1712.19	VV	1.0000e6	0.0415	13.2786	0.0000
32	18.624	69713.59	5961.93	VV	1.0000e6	0.0415	13.2786	0.0000
33	18.781	32851.48	3017.22	VV	1.0000e6	0.0415	13.2786	0.0000
34	19.230	42178.13	3595.82	VB	1.0000e6	0.0415	13.2786	0.0000
		3197356.50	400821.69			1.4120	451.4732	0.0011

115%
3.89 x 2/20
0.38 mg/kg
947.

END

Chromatogram

Sample Name : 9406119-02B

Sample #: SC ;S

Page 1 of 1

FileName : l:\data\tchrom\pest\varc\C__091.raw

Date : 06/13/94 17:41

Method : DIESEL.C.ins

Time of Injection: 06/13/94 17:06

Start Time : 1.00 min

End Time : 34.66 min

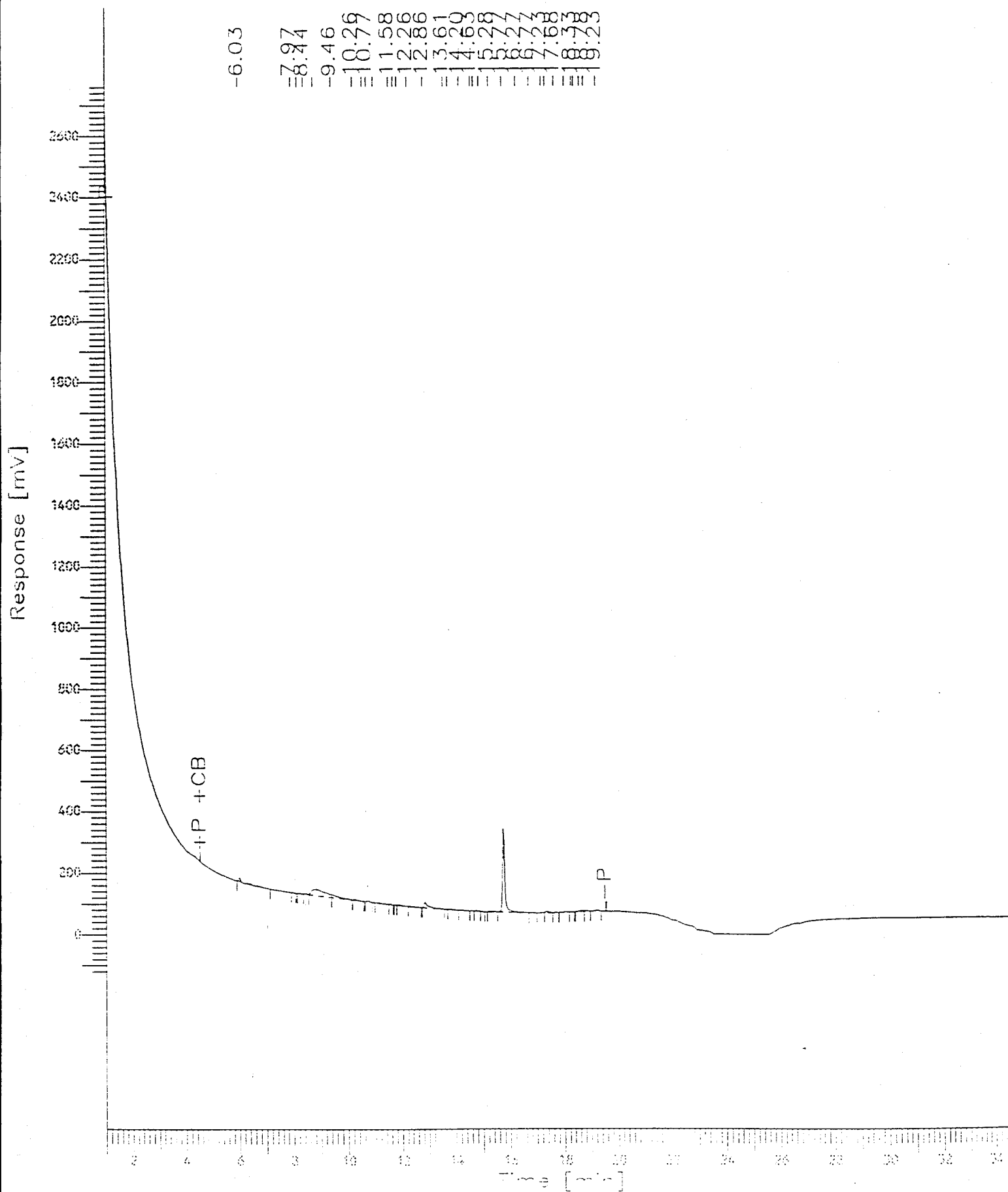
Low Point : -138.08 mV

High Point : 2761.78 mV

Scale Factor: 1

Plot Offset: -138 mV

Plot Scale: 2900 mV



Software Version: 3.2 <16C20>

Sample Name : 9406119-03B

Sample Number: SC ;S

Operator : SEG

Time : 6/16/94 09:13 AM

Study : MOOSD

Instrument : VARC

Channel : A A/D mV Range : 10000

AutoSampler : NONE

Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 6/16/94 06:51 AM

Delay Time : 1.00 min.

End Time : 34.66 min.

Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\DATA\TCHROM\PEST\VARC\C__138.raw

Result File : C:\WINDOWS\TEMP\rst3904.rst

Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins

Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc

Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp

Sequence File : <none>

Inj. Volume : 1 ul

Area Reject : 100.00

Sample Amount : 1.0000

Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	5.944	203371.25	6417.37	BB	9.9999e5	0.0415	2866.8191	0.0000
2	7.346	15820.31	3630.03	BB	9.9999e5	0.0415	2866.8191	0.0000
3	7.680	21247.50	2723.32	BV	1.0000e6	0.0415	2866.8191	0.0000
4	7.947	8782.50	2667.07	VB	9.9999e5	0.0415	2866.8191	0.0000
5	8.113	3035.00	1156.78	BB	1.0000e6	0.0415	2866.8191	0.0000
6	8.351	486575.00	65856.11	BB	1.0000e6	0.0415	2866.8191	0.0000
7	8.934	289118.75	-15163.64	BV	1.0000e6	0.0415	2866.8191	0.0000
8	9.451	45201.88	12445.64	VV	1.0000e6	0.0415	2866.8191	0.0000
9	9.861	117753.75	21555.59	VV	1.0000e6	0.0415	2866.8191	0.0000
10	9.952	96778.13	13524.04	VV	1.0000e6	0.0415	2866.8191	0.0000
11	10.234	683825.94	61430.07	VV	1.0000e6	0.0415	2866.8191	0.0000
12	10.488	258275.31	39876.00	VV	1.0000e6	0.0415	2866.8191	0.0000
13	10.585	516204.69	60813.63	VV	9.9999e5	0.0415	2866.8191	0.0000
14	10.736	453645.31	59140.16	VV	1.0000e6	0.0415	2866.8191	0.0000
15	10.980	1529837.50	135053.58	VV	1.0000e6	0.0415	2866.8191	0.0000
16	11.538	8961845.00	585966.06	VV	9.9999e5	0.0415	2866.8191	0.0000
17	11.935	2880380.25	249959.13	VV	1.0000e6	0.0415	2866.8191	0.0000
18	12.448	10796190.00	471222.53	VV	1.0000e6	0.0415	2866.8191	0.0000
19	12.747	8377763.50	571824.13	VV	1.0000e6	0.0415	2866.8191	0.0000
20	12.953	6441212.50	621689.00	VV	1.0000e6	0.0415	2866.8191	0.0000
21	13.310	25580404.00	1.73e6	VV	1.0000e6	0.0415	2866.8191	0.0000
22	13.620	18985848.00	1.75e6	VV	1.0000e6	0.0415	2866.8191	0.0000
23	13.765	4511071.00	1.13e6	VV	9.9999e5	0.0415	2866.8191	0.0000
24	14.004	17928910.00	1.25e6	VV	1.0000e6	0.0415	2866.8191	0.0000
25	14.235	17535054.00	1.41e6	VV	1.0000e6	0.0415	2866.8191	0.0000
26	14.365	13301834.00	1.51e6	VV	1.0000e6	0.0415	2866.8191	0.0000
27	14.556	16877844.00	1.56e6	VV	1.0000e6	0.0415	2866.8191	0.0000
28	14.786	20768882.00	1.63e6	VV	9.9999e5	0.0415	2866.8191	0.0000
29	14.968	16845532.00	1.71e6	VV	1.0000e6	0.0415	2866.8191	0.0000
30	15.216	28620664.00	1.88e6	VV	1.0000e6	0.0415	2866.8191	0.0000
31	15.285	9189227.00	1.86e6	VV	1.0000e6	0.0415	2866.8191	0.0000
32	15.551	41590124.00	2.18e6	VV	1.0000e6	0.0415	2866.8191	0.0000
33	15.733	24043600.00	2.22e6	VV	1.0000e6	0.0415	2866.8191	0.0000
34	16.031	27347374.00	1.98e6	VV	1.0000e6	0.0415	2866.8191	0.0000
35	16.152	5877272.00	1.96e6	VV	1.0000e6	0.0415	2866.8191	0.0000
36	16.270	19946696.00	2.01e6	VV	1.0000e6	0.0415	2866.8191	0.0000
37	16.390	8009258.50	2.01e6	VV	1.0000e6	0.0415	2866.8191	0.0000
38	16.454	18362190.00	2.06e6	VV	1.0000e6	0.0415	2866.8191	0.0000
39	16.620	16266244.00	2.04e6	VV	9.9999e5	0.0415	2866.8191	0.0000
40	16.713	6065372.50	2.03e6	VV	1.0000e6	0.0415	2866.8191	0.0000
41	16.888	28762140.00	2.10e6	VV	1.0000e6	0.0415	2866.8191	0.0000
42	17.071	26664730.00	2.39e6	VV	1.0000e6	0.0415	2866.8191	0.0000
43	17.220	15223191.00	2.21e6	VV	1.0000e6	0.0415	2866.8191	0.0000
44	17.386	54565904.00	2.35e6	VV	1.0000e6	0.0415	2866.8191	0.0000
45	17.730	40886148.00	2.03e6	VV	1.0000e6	0.0415	2866.8191	0.0000
46	18.079	9231989.00	1.87e6	VV	1.0000e6	0.0415	2866.8191	0.0000
47	18.256	44658808.00	1.86e6	VV	9.9999e5	0.0415	2866.8191	0.0000
48	18.601	38775860.00	1.56e6	VV	1.0000e6	0.0415	2866.8191	0.0000
49	19.122	31691702.00	1.25e6	VB	1.0000e6	0.0415	2866.8191	0.0000

6.90e8

5.66e7

2.0350

1.4047e5

0.0000

=====

END

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Chromatogram

Sample Name : 9406119-03B

FileName : L:\DATA\TCHROM\PEST\VARC\C__138.raw

Method : DIESEL.C.ins

Start Time : 1.00 min

Scale Factor: 1

End Time : 34.66 min

Plot Offset: -117 mV

Sample #: SC ;S

Date : 6/16/94 09:14 AM

Time of Injection: 6/16/94 06:51 AM

Low Point : -116.53 mV

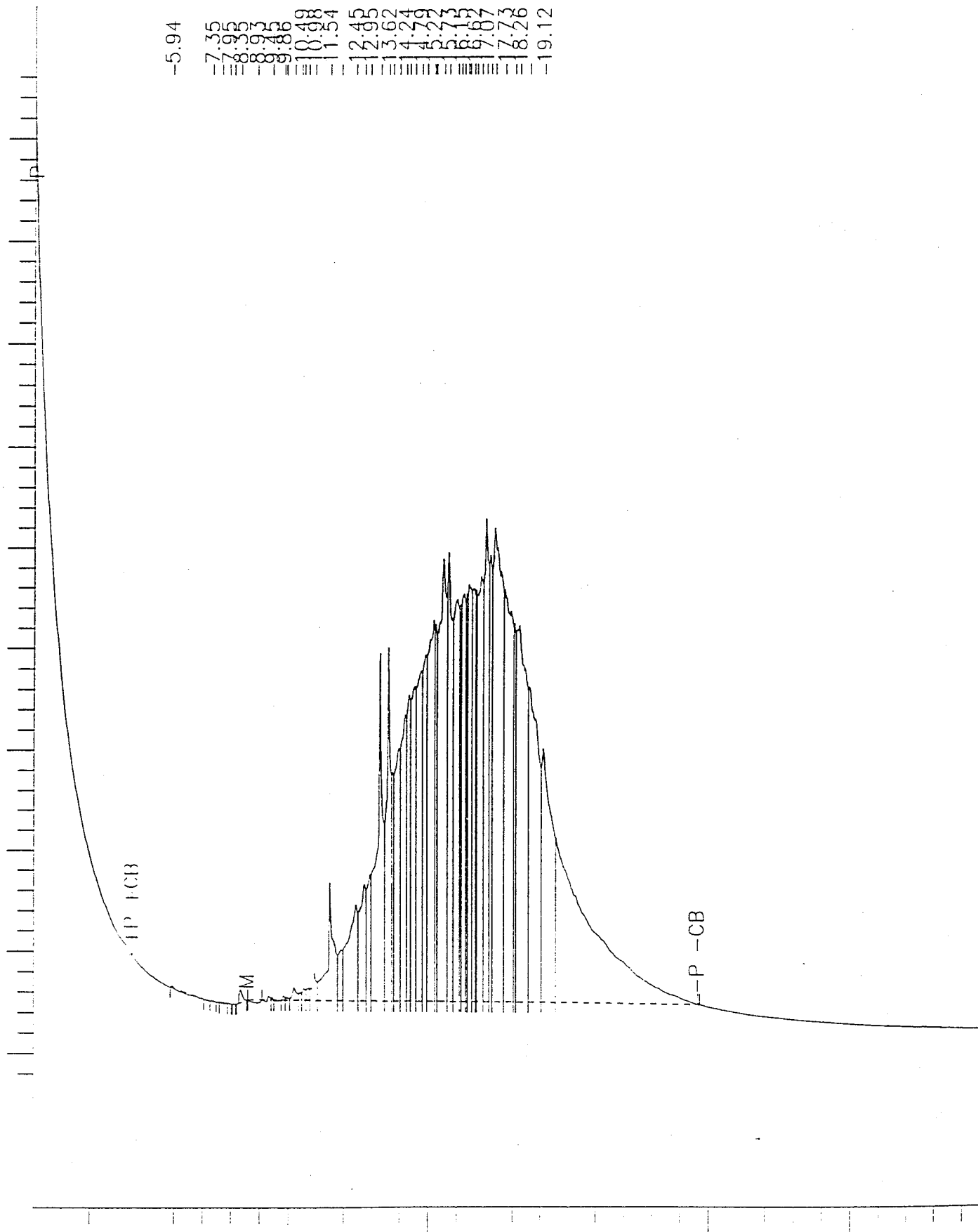
Plot Scale: 4926 mV

Page 1 of 1

High Point : 4809.63 mV

Response [mV]

-5.94
7.35
7.93
8.33
8.80
9.48
10.48
11.54
12.45
13.62
14.24
14.79
15.33
16.17
17.26
18.26
19.12



Time [min]

Software Version: 3.2 <16C20>

Sample Name : 9406119-04B

Sample Number: SC ;S

Operator : SEG

Time : 06/13/94 19:03

Study : MCDSD

Instrument : VARC

AutoSampler : NONE

Rack/Vial : 0/0

Channel : A A/D mV Range : 10000

Interface Serial # : 8328570191 Data Acquisition Time: 06/13/94 18:28

Delay Time : 1.00 min.

End Time : 34.66 min.

Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\data\tchrom\pest\varc\C__093.raw

Result File : L:\data\tchrom\pest\varc\C__093.rst

Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.INS

Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.PRC

Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.SMP

Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.SEQ

Inj. Volume : 1 ul

Area Reject : 100.00

Sample Amount : 1.0000

Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	6.029	242235.00	9156.83	BB	1.0000e6	0.0415	25.0325	0.0000
2	7.981	21500.00	1539.17	BV	9.9999e5	0.0415	25.0325	0.0000
3	8.213	59105.63	3683.64	VV	1.0000e6	0.0415	25.0325	0.0000
4	8.445	99174.84	6784.23	VV	1.0000e6	0.0415	25.0325	0.0000
5	8.834	1255813.75	26675.37	VB	1.0000e6	0.0415	25.0325	0.0000
6	10.265	17620.08	3099.56	BB	1.0000e6	0.0415	25.0325	0.0000
7	10.714	66019.53	2163.11	BB	1.0000e6	0.0415	25.0325	0.0000
8	11.581	4900.00	1767.97	BB	1.0000e6	0.0415	25.0325	0.0000
9	11.899	10435.63	3459.31	BB	1.0000e6	0.0415	25.0325	0.0000
10	12.894	24890.00	5500.27	BB	1.0000e6	0.0415	25.0325	0.0000
11	14.349	1272589.38	21062.97	BV	1.0000e6	0.0415	25.0325	0.0000
12	14.642	347729.91	17264.12	VV	1.0000e6	0.0415	25.0325	0.0000
13	14.785	146082.66	14964.34	VV	1.0000e6	0.0415	25.0325	0.0000
14	14.985	110889.84	10493.73	VV	1.0000e6	0.0415	25.0325	0.0000
15	15.160	85969.45	7062.88	VV	1.0000e6	0.0415	25.0325	0.0000
16	15.301	57201.91	6757.95	VV	1.0000e6	0.0415	25.0325	0.0000
17	15.400	9415.12	3009.60	VV	1.0000e6	0.0415	25.0325	0.0000
18	15.476	8816.09	1501.03	VB	9.9999e5	0.0415	25.0325	0.0000
19	15.784	1481865.75	274148.41	BV	1.0000e6	0.0415	25.0325	0.0000
20	16.041	369473.44	58672.33	VE	1.0000e6	0.0415	25.0325	0.0000
21	16.300	35570.00	4046.02	EV	1.0000e6	0.0415	25.0325	0.0000
22	16.585	2335.00	765.93	VV	9.9999e5	0.0415	25.0325	0.0000
23	16.775	36885.94	4852.97	VB	1.0000e6	0.0415	25.0325	0.0000
24	17.084	1980.00	495.43	BB	1.0000e6	0.0415	25.0325	0.0000
25	17.262	10833.28	2146.45	BV	1.0000e6	0.0415	25.0325	0.0000
26	17.386	21881.70	2911.80	VE	1.0000e6	0.0415	25.0325	0.0000
27	17.579	320.00	210.27	EB	1.0000e6	0.0415	25.0325	0.0000
28	17.704	11190.31	1664.07	BV	9.9999e5	0.0415	25.0325	0.0000
29	18.097	28683.91	3037.02	VV	1.0000e6	0.0415	25.0325	0.0000
30	18.646	104811.56	6492.85	VV	1.0000e6	0.0415	25.0325	0.0000
31	18.819	27340.31	3082.94	VV	9.9999e5	0.0415	25.0325	0.0000
32	18.977	18963.83	2385.15	VV	1.0000e6	0.0415	25.0325	0.0000
33	19.258	35035.08	3894.85	VB	1.0000e6	0.0415	25.0325	0.0000
		6027560.00	514752.63			1.3705	826.0714	0.0006

END

Report Stored in ASCII File: L:\data\tchrom\pest\varc\C__093.TXT

Chromatogram

Sample Name : 9406119-04B

FileName : l:\data\tchrom\pest\varc\C__093.raw

Method : DIESEL.C.ins

Start Time : 1.00 min

Scale Factor: 1

End Time : 34.66 min

Plot Offset: -138 mV

Sample #: SC ;S

Date : 06/13/94 19:03

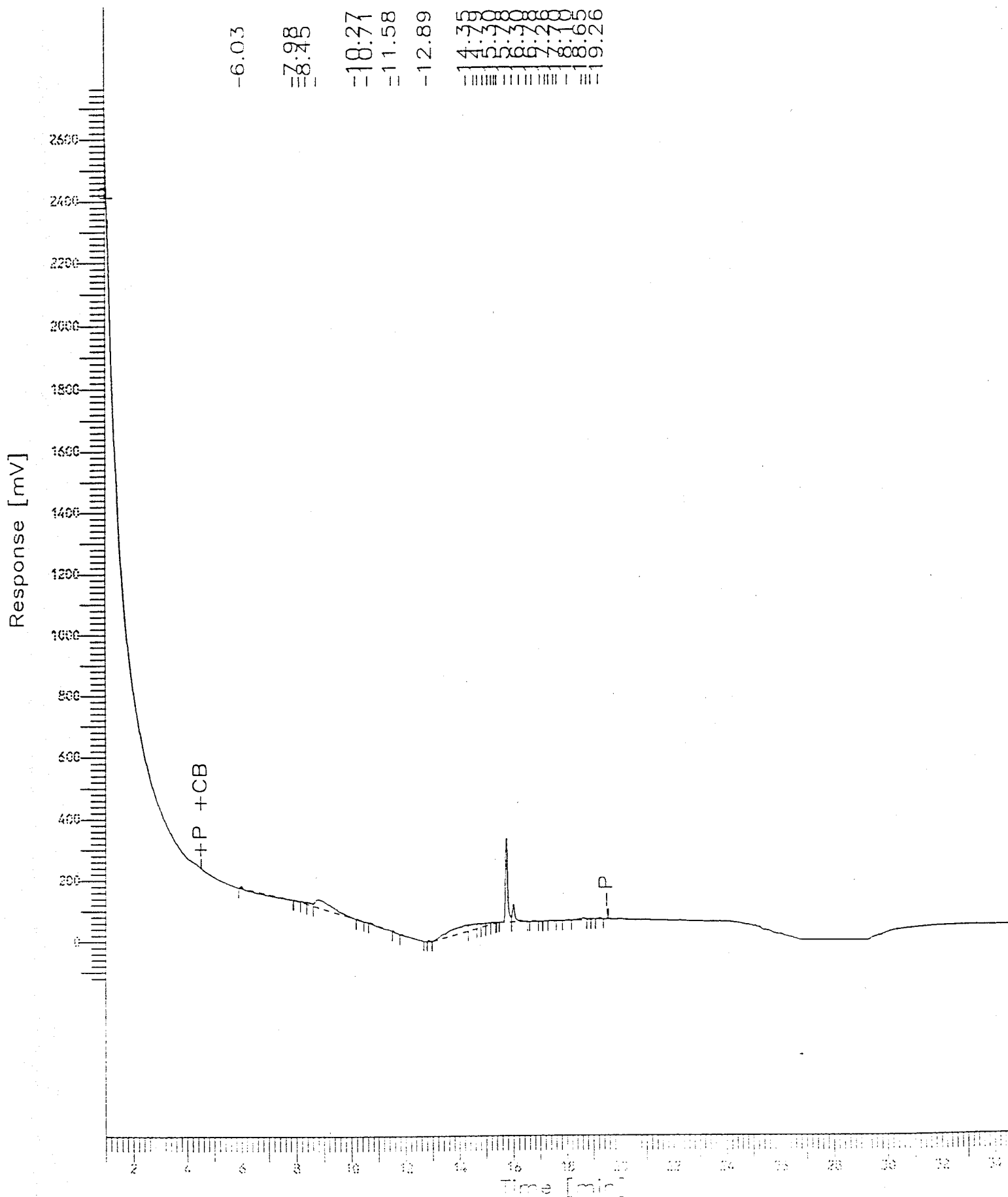
Time of Injection: 06/13/94 18:28

Low Point : -138.40 mV

Plot Scale: 2907 mV

Page 1 of 1

High Point : 2768.17 mV



Software Version: 3.2 <16C20>
Sample Name : 9406119-05B Time : 06/16/94 06:45
Sample Number: SC ;S Study : MODSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/16/94 06:10
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__137.raw
Result File : l:\data\tchrom\pest\varc\C__137.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.INS
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.PRC
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.SMP
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.SEQ

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	5.938	22769.69	5918.96	BB	1.0000e6	0.0415	161.0492	0.0000
2	8.363	868379.38	63293.98	BE	1.0000e6	0.0415	161.0492	0.0000
3	9.153	98670.00	9692.14	EV	1.0000e6	0.0415	161.0492	0.0000
4	9.434	87200.00	7650.87	VB	1.0000e6	0.0415	161.0492	0.0000
5	9.843	12239.69	1446.72	BB	1.0000e6	0.0415	161.0492	0.0000
6	10.263	80777.50	8633.71	BV	9.9999e5	0.0415	161.0492	0.0000
7	10.582	26407.03	3180.29	VV	1.0000e6	0.0415	161.0492	0.0000
8	10.731	13305.31	3741.82	VB	9.9999e5	0.0415	161.0492	0.0000
9	10.983	59672.97	12115.43	BV	1.0000e6	0.0415	161.0492	0.0000
10	11.132	25893.44	3314.20	VV	1.0000e6	0.0415	161.0492	0.0000
11	11.318	13080.00	2675.48	VV	1.0000e6	0.0415	161.0492	0.0000
12	11.378	15583.75	3000.36	VB	1.0000e6	0.0415	161.0492	0.0000
13	11.654	332664.38	35098.41	BV	1.0000e6	0.0415	161.0492	0.0000
14	11.858	121417.81	13390.94	VV	1.0000e6	0.0415	161.0492	0.0000
15	12.099	53927.81	8214.47	VB	1.0000e6	0.0415	161.0492	0.0000
16	12.463	504055.00	56345.83	BV	9.9999e5	0.0415	161.0492	0.0000
17	12.745	237435.63	27694.25	VV	1.0000e6	0.0415	161.0492	0.0000
18	12.945	90659.53	15889.54	VV	1.0000e6	0.0415	161.0492	0.0000
19	13.317	3320297.50	601675.31	VV	1.0000e6	0.0415	161.0492	0.0000
20	13.623	3385373.00	540502.81	VE	9.9999e5	0.0415	161.0492	0.0000
21	14.089	842610.00	70716.28	EV	1.0000e6	0.0415	161.0492	0.0000
22	14.253	726328.13	84687.43	VV	1.0000e6	0.0415	161.0492	0.0000
23	14.369	663018.56	96434.88	VV	9.9999e5	0.0415	161.0492	0.0000
24	14.484	922894.06	75440.34	VV	1.0000e6	0.0415	161.0492	0.0000
25	14.761	223852.19	38785.28	VV	1.0000e6	0.0415	161.0492	0.0000
26	15.216	2303777.50	121696.38	VV	1.0000e6	0.0415	161.0492	0.0000
27	15.547	2529927.75	267508.75	VV	1.0000e6	0.0415	161.0492	0.0000
28	15.730	2463779.25	412581.63	VV	1.0000e6	0.0415	161.0492	0.0000
29	15.880	447894.69	92159.37	VV	1.0000e6	0.0415	161.0492	0.0000
30	15.986	994749.38	114843.91	VV	1.0000e6	0.0415	161.0492	0.0000
31	16.236	882835.00	99981.71	VV	1.0000e6	0.0415	161.0492	0.0000
32	16.316	1797394.63	103534.55	VV	1.0000e6	0.0415	161.0492	0.0000
33	16.715	711522.63	76565.35	VV	1.0000e6	0.0415	161.0492	0.0000
34	16.895	586316.25	79288.16	VV	1.0000e6	0.0415	161.0492	0.0000
35	17.077	3259156.25	278378.66	VV	1.0000e6	0.0415	161.0492	0.0000
36	17.383	2005205.63	254419.64	VV	1.0000e6	0.0415	161.0492	0.0000
37	17.480	1178063.75	203964.69	VV	1.0000e6	0.0415	161.0492	0.0000
38	17.598	1349964.63	138030.22	VV	1.0000e6	0.0415	161.0492	0.0000
39	17.831	550271.38	84572.18	VV	1.0000e6	0.0415	161.0492	0.0000
40	17.958	560457.00	72764.59	VV	1.0000e6	0.0415	161.0492	0.0000
41	18.113	592353.44	68653.92	VV	1.0000e6	0.0415	161.0492	0.0000
42	18.260	753367.19	74003.49	VV	1.0000e6	0.0415	161.0492	0.0000
43	18.489	403674.34	50580.95	VV	1.0000e6	0.0415	161.0492	0.0000
44	18.619	392094.38	47192.97	VV	1.0000e6	0.0415	161.0492	0.0000
45	18.872	1208190.00	90239.58	VV	1.0000e6	0.0415	161.0492	0.0000
46	19.145	930569.38	98787.81	VV	1.0000e6	0.0415	161.0492	0.0000
47	19.390	128419.06	20079.44	VB	1.0000e6	0.0415	161.0492	0.0000
		33778996.00	4.63e6			1.9519	7549.3130	0.0001

=====

END

=====

Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__137.TX0

APPENDIX G

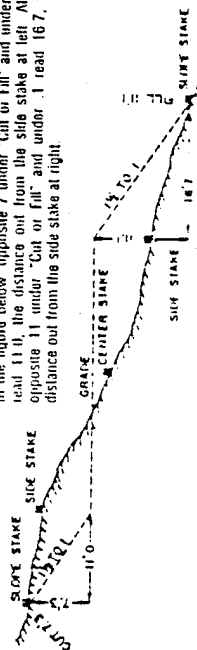
FIELD NOTES

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DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1 1/2 to 1.

In the figure below, opposite 7 under "Cut or Fill" and under 3 (read 11.4), the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under 1 read 16.7, the distance out from the side stake at right.

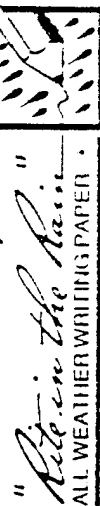


Distance out from Side or Shoulder Stake	0	1	2	3	4	5	6	7	8	9	Distance out from Side or Shoulder Stake
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

Optech Phone Calling Card No.

1-800-950-1111- O - (AL) NUM - ~~52-3751~~

~~52-3751~~ Craig Donnelly 452-3751 (H)



532 - 731-9328-3023

Name EARL E PARKER

Optech

Address 4100 NW Loop 410 St. 230

San Antonio, Tx 78229

Phone (210) 731-0000

Project ZANESVILLE ANG5

1308 - 191

PAHA 90-91-D-0002/0024

"Rite in the Rain"—a unique all weather writing surface created to shed water and to enhance the written image. Makes it possible to write sharp, legible field data in any kind of weather.

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FEO-Ex # 1342-6486-1

1040	Begin to check on equipment in the boxes and prepare last minute coordination. Call Mark Escobar at OptTech to confirm delivery of Ice chests for samples. Ice chests will be delivered tomorrow morning.	1215	Break for lunch.
1110	Call Mr. Jones (JEDI). Give him location of Station, and confirm last minute coordinations. Drillers will be here tomorrow around 9 AM.	1300	Return to Zanesville Station to decon brass sleeves, end caps, split spoons. Check operations of field GC and PID. Joe Byrd decons sleeves, caps, and spoons. Louis Ebbert sets up and calibrates field GC. Louis practices on GC. Calibrates and runs Analysis. Earl Pytko assists J.B. and L.J. with tasks.
1145	Depart Station to pick up zero-grade Air for field GC.	1615	Complete deconning and checking out equipment. Everything looks fine. Prepare to depart site for the day.
1155	Arrive at Valley Welding Supply to pick up Zero Air. Check to insure it will fit on our regulator/ high pressure fill horn.	1625	DEPART Station for the day.

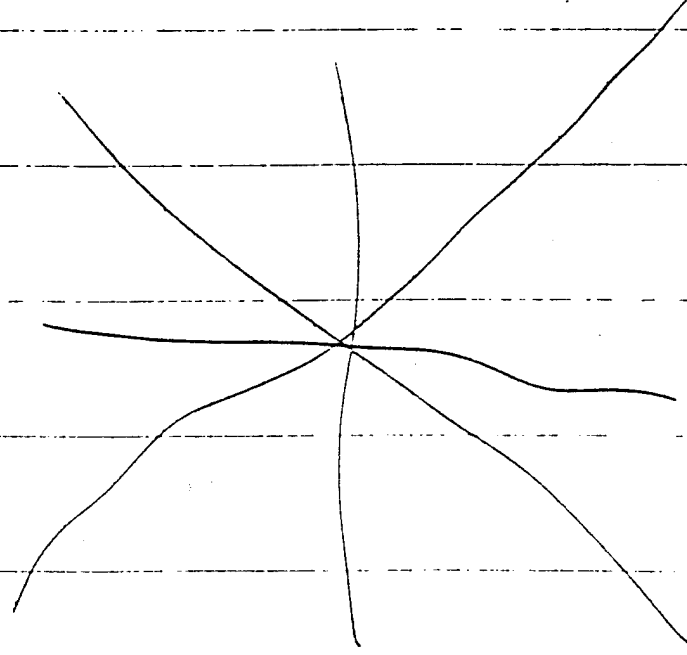
DAY 2

2 JUNE 94

THURSDAY

2000 BEGIN to prepare sample packages for soil sampling. Cut teflon and aluminum foil squares, pre fill out labels and label zip-lock bags for brass sleeves and field GC work.

2330 Complete work for the day.



0730 E.P., J.B. and L.I. Arrive at the station w/ ice for soil sample preservation

Begin to prepare for daily operations.

J.B. prepares decan area and L.I. gets field GC fired up and calibrated.

0900 Call Matt Alexander to give him a situation and status report. Fax daily progress report from yesterday.

0910 Call Saul Alvarez (Bio-environmental engineer) at Rickenback AKCS in Columbus to give him a brief description of the job to be done here. Agreed to inform him of unusual situations and will provide field screening results.

Earl E. Paul, Jr. 6/1/94 (10.5 hr)

0920

All set up. Waiting for drillers to arrive at the site.

WEATHER:

Partly cloudy and mild.
Temp: 65° Hi: Mid 70's.
Winds are light out of the Northwest at 5 to 10 mph.
Presently is calm.

1005

FED-EX Arrives at the Station w/ Ice Chest and Chain of Custody forms for Soil Samples.

1030

Drillers arrive at the site. Introductions and brief walk through of AOC's. Drillers begin to set up in the area. Once set up will conduct safety briefing prior to drilling at AOC-A.

1050

Safety Meeting
Earl Parker } opTech
Joe Byrd
Louis Ibarra

Rob Capeland }
Razor Groves } JEOI
Johnny Moore }

Discuss site history of each AOC and what contaminants should be expected.
Underground utility locations in the area.
Emergency situations, eyewash location, evacuation procedures and hospital location.

Drillers set up over AOC A at A-004 BH. Will be drilled to water or bedrock.

Calibrate PID w/ 100 PPM Isobutylene
Obtain 004 BH Int 1
0.0 - 1.5' BLS Recovery: 100%
SPT 14 0.0 - 0.5' BLS
9 0.5 - 1.0' BLS
6 1.0 - 1.5' BLS

PID: Opening 0.0 PPM
ATHA Headspace: 0.0 PPM

Sand and soil. Mostly a silty, clay loam. Lt. Brown and slightly moist. Mostly silty loam and some organic particles.

1100

1105

INT 1

1113 Interval 5.0-6.5' BLS Recovery: 90%
 SPT 4 5.0-5.5' BLS
 9 5.5-6.0' BLS
 11 6.0-6.5' BLS

PID Opening: 0.0 PPM
 ATHA: 4.8 PPM

Sand, silt loam. Mostly a brown, very fine and cohesive sandy/silty loam. Clay and silt. cohesive. Moist.

1130 Interval 10.0-11.5' BLS Recovery: 90%
 SPT 2 10.0-10.5'
 12 10.5-11.0'
 35 11.0-11.5'

PID Opening: 0.0 PPM
 ATHA: PID Not Functioning

Top is sand, silt. clay loam w/ slight moisture, cohesive. Lt brown. At 10.8' BLS sharp contact to sand. Mostly a medium sand, mottled, lgt. brown to tan sand. Clean sand w/ little silt.

1148

Drill to 14' BLS when drillers encounter difficulty in drilling. Will attach a spoon to drive.

Interval 14.0-15.5' BLS
 SPT 50 14.0-14.5'

50 Blow counts indicates formal refusal. Tight, mottled sand in the spoon. Sandstone / shale at the bottom of the hole at 14.2' BLS.

1200

Drillers break for lunch. PID is not functioning. Perform trouble shooting on PID as per manual. No results.

1215

Call HAZCO on PID. Confirm we have done what we can do in the field. They will send us another one first thing in the morning.

1220

Call John Morris in San Antonio.

Talk about PID not functioning.

We will use the LEL to monitor

drilling health and safety issues,

And will us field GC (hr. BTEX)

for selection criteria for sample

selection for the lab.

1300

Drillers return from lunch. Set up

over A-005 BH.

1305

A-005 BH Interval 0.0'-1.5'

No PID.

Recovery: 90%

SPT

12 0.0'-0.5'

14 0.5'-1.0'

10 1.0'-1.5'

Soil and silty, clay loam. Mostly

a lt. brown, cohesive, slightly moist

clay, silt loam.

1318

A-005 BH Int 5.0'-6.5' BCS

No PID

Recovery: 100%

INT 2

SPT

4

5.0'-5.5'

8

5.5'-6.0'

11

6.0'-6.5'

Lt. Brown clay loam w/ small angular

black quartz fragments. Little sand

mostly clay, silt loam w/ quartz.

A 1330

A-005 BH

Int 10.0'-11.5' BCS

→

Not
Selected

Recovery: 100%

SPT

14

10.0'-10.5'

16

10.5'-11.0'

18

11.0'-11.5'

Lt. Brown

silt loam becoming more

sandy. At 11.0' sharp contact w/

clean, tan to white, mottled, sand.

1340

Complete drilling at A-005 BH

Moving to A-006 BH

1346

begin to drill at A-006 BH

A-006 BH Int 0.0'-1.5' BCS

INT 1

No PID

Recovery: 100%

SPT: 8 0.0' - 0.5'
10 0.5' - 1.0'
9 1.0' - 1.5'

Soil to clay, silt loam w/ small black shale fragments w/ black quartz present. Mostly a clay, silt loam.

1355 A-006 BH 5.0' - 6.5' BLS
SPT: 6 10.0' - 11.5' BLS
5.0' - 5.5' Rec: 95%
10 5.5' - 6.0'
10 6.0' - 6.5'

Not
SELECTED

Clay to silt loam, brown, slightly moist, very cohesive. Black shale and some quartz fragments.

1410 A-006 BH 10.0' - 11.5' BLS
SPT: 6 10.0' - 10.5' Rec: 100%
12 10.5' - 11.0'
23 11.0' - 11.5'

Clay to silt loam. Lt brown, cohesive and slightly moist. Contains fewer black shale fragments, quartz. Contact to sand to clean sand at

approx 10.5' BLS. Sand is mottled, tan to white to lgt. brown.

1415 Complete drilling at A-006 BH. Drillers performing maintenance on SPT hammer.

Moving drilling rig over A-007 BH while performing maintenance on hammer.

1450 Begin to drill at A-007-BH.
A-007 BH 0.0' - 1.8' BLS
SPT: 5 0.0' - 0.5' Rec: 100%
10 0.5' - 1.0'
17 1.0' - 1.5'

INT 1

Soil to dry clay loam mostly lt. tan dry, very cohesive and hard clay loam. few rock fragments

1507 A-007 BH 5.0' - 6.5' BLS
SPT: 4 5.0' - 5.5'
8 5.5' - 6.0'
13 6.0' - 6.5'

INT 2

Recovery: 100%

Lt. Brown clay and silt loam with black shale and quartz fragments. Mostly a slightly moist loam, clay loam.

1519 A-007 BH 10.0' - 11.5' BLS

SPT: 5 10.0 - 10.5'
10 10.5 - 11.0'
8 11.0 - 11.5'

Recovery: 100%

Brown to tan silty, clay loam. Some black shale and quartz fragment w/ sand contact at 11.3' BLS. Mostly a tan to white mottled sand. Slightly moist to dry sand.

1540 Complete drilling at A-007 BH
Move to A-003 BH

1545 Begin to drill at A-003 BH
A-003 BH Int 0.0' - 1.5' BLS

SPT: 10 0.0 - 0.5'
9 0.5' - 1.0'
5 1.0' - 1.5'

Recovery: 100%

1555

Int 2

A-003 BH Int 5.0 - 6.5' BLS

SPT: 8 5.0 - 5.5'
10 5.5 - 6.0
15 6.0 - 6.5

Recovery: 100%

Clay and silt loam w/ few sand grains. Brown and moist, very cohesive. Some rock and shale fragments. Mostly a clay loam.

1605

Not Selected

A-003 BH Int 10.0' - 11.5' BLS

SPT: 4 10.0 - 10.5'
12 10.5 - 11.0'
23 11.0 - 11.5'

Recovery: 100%

Clay and silt loam w/ few shale and quartz fragments. Lt. Brown and moist. Very cohesive. Grading to a sand at 11.3' BLS. Then mostly tan to lgt. tan sand.

1613 Complete drilling at A-003 BH.
Moving to A-001 BH.

1620 → BEGUN to drill AT A-001 BH.

A-001 BH Interval 0.0-1.5' BCS

SPT 9 0.0-0.5'
7 0.5-1.0'
5 1.0-1.5'

Recovery: 100%

Soil and Brown to Lt tan silty
to clay loam. Rock fragments of
shale and quartz. Few gravel.
Mostly clay loam, dry cohesive

1628 → A-001 BH Interval 5.0-6.5' BCS

SPT 5 5.0-5.5'
10 5.5-6.0'
11 6.0-6.5'

Recovery: 100%

Silt and clay loam with few
sand particles. Some small angular
rock fragments. Mostly a clay
and silt loam and small, angular
rock fragments. Moist, cohesive.

1635 →

NOT

SELECTED

A-001 BH Interval 10.0-11.5' BCS

SPT 5 10.0-10.5'
12 10.5-11.0'
16 11.0-11.5'

Recovery: 100%

Brown silt and clay loam, mostly
a clay/silt. w/ fine sand and
black shale and quartz fragments.
Contact to sand at 10.5' BCS. Sand
is mottled, tan to white and moist.

1645 Complete drilling at A-001 BH
Move to A-002 BH

1655 → A-002 BH 0.0-1.5' BCS

SPT 18 0.0-0.5'
9 0.5-1.0'
5 1.0-1.5'

Recovery: 100%

Soil and silt to clay loam.
Mostly dry, cohesive, and
Lt Brown to tan. Contains few
rock fragments.

INT 1

1708 A-002 BH 5.0-6.5' BCS
 SPT 5 5.0-5.5'
 9 5.5-6.0'
 11 6.0-6.5'

Recovery: 100%
 Silt and clay loam. Mostly silty
 w/ few sand grains. Slightly mottled,
 moist and cohesive. Some small
 shale and quartz fragments but
 mostly a silty loam.

1715 A-002 BH 10.0-11.5'
 SPT 5 10.0-10.5'
 11 10.5-11.0'
 19 11.0-11.5'

Recovery: 100%
 Silt and clay loam w/ contact
 with brown to tan sand, mottled
 and slightly moist. Sand contact
 at 10.5' BCS. sand grades from
 brown and mottled pt contact
 to tan to white, becoming
 increasingly hard.

1725 Complete drilling at A-002BH
 and conclude drilling for the day.

Drillers have been grouting
 holes throughout the day and
 are now completing grouting
 at A-001 BH and A-002 BH.

Will cement plugs at surface
 tomorrow.

Drillers are demobilizing and preparing
 equipment for the night.

1725 Drillers depart the Site. Going to
 pick up a few supplies for
 tomorrow.

1735 J.B. and E.P. begin site clean-up.

Dump decon water in decon
 water drum.

L.I. running final calibration and
 air blank on field GC.

General Site Cleanup

DAY 3

3 JUNE 94

FRIDAY

1745 E.P. begins to prepare Chem of Custody for Soil samples.

1800 Depart Station for FED-EX office to deliver soil samples.

1820 E.P. J.B. and C.I. Arrive at FED-EX office and ship soil samples.

1840 Arrive back at hotel.

Phoned John Morris in San Antonio. Informed him of our progress and that since groundwater was not encountered above bedrock, optional activities will not be performed. Field activities at the site will be completed tomorrow. Will contact Matt Alexander to inform ANSRC/CEUR PM of progress.

Earl E. Lantz 6/2/94 (11 hrs)

0700 E.P., J.B., L.I. Arrive at HL site to prepare for operations.

Begin to set up decon station for sampling at AOC B.

0735 Drillers Arrive at the site. Begin to set up for days drilling.

0740 J.B. Arranges for shipping service to pick up equipment box on Monday.

0740 Safety Briefing
 Earl Parker
 Rob Copeland } JEOI
 Roger Groves }
 Johnny Moore }
 Joe Byrd } OPTech
 Louis Ibarra }
 Talk about hazards around AOC-B.
 Review concerns. Talk about site contamination.

WEATHER: Clear to Partly Cloudy
mild and breezy. Temp: 65°
Hi - low to mid 70's. Sunny to
partly cloudy. Winds out of the
west, northwest at 10-15 mph.

Drillers prepare to drill. Set up
over B-003 BH first.

0810 Set up over B-003 BH to
drill to bedrock/groundwater.

0815 B-003 BH 0.0 - 1.5' BLS
* INTERVAL 1
SPT 29 0.0 - 0.5'
15 0.5 - 1.0'
8 1.0 - 1.5'

No PID.

Recovery: 100%

Hard, dry, silt, clay loam w/
some gravel at top. Small
shale and quartz fragments in
matrix. Mostly silt/clay loam.
Mostly dry, cohesive.

0825

B-003 BH
* INTERVAL 2
SPT
5.0' - 5.5'
5.5' - 6.0'
6.0' - 6.5'

Recovery: 100%

Brown silt, clay loam w/ sand
stringers and slight mottling.
Few small shale fragments. Moist,
cohesive.

0831

B-003 BH
SPT 5 10.0' - 10.5'
6 10.5' - 11.0'
6 11.0' - 11.5'

Recovery: 100%

Brown silt, clay loam to a brown
sand to a tan to light brown
to white sand at 11.0' BLS. Mostly
a clean sand, moist, and very
cohesive.

Will continue to drill this
hole till bedrock and check
for groundwater.

0838 Drill to approx. 14' BLS when Auger drilling became difficult. Loading up spoon for sample.

0840 B-003 BH 14.0' - 15.5' BLS
 SPT 33 14.0 - 14.5'
 34 14.5 - 15.0'
 50 15.0 - 15.5'
 Sand, brown to white, mottled. Mostly sand, very cohesive to getting hard near bottom. Drilling into weathered sandstone top. Formal refusal on last 6" interval. Sand is slightly moist. No indication of groundwater.

Complete at B-003 BH. Moving to B-002 BH.

0850 X Begin at B-002 BH
 B-002 BH 0.0' - 1.5' BLS
 INTERVAL 1 0.0 - 0.5'
 SPT 13 0.5' - 1.0'
 13 1.0' - 1.5'
 12

Recovery: 100%
 Gravel at top w/ hard silt, clay loam. Mostly dry w/ some small shale and quartz fragments. Cohesive.

0856 B-002 BH 5.0 - 6.5' BLS
 SPT 11 5.0 - 5.5'
 12 5.5 - 6.0'
 13 6.0 - 6.5'

Recovery: 100%
 Mostly a brown silt, clay loam. Shale fragments, mottled, with sand stringers. Mostly a silt loam, slightly moist and cohesive.

0905 → B-002 BH 10.0' - 11.5' BLS
 SPT 4 10.0 - 10.5'
 11 10.5 - 11.0'
 11 11.0 - 11.5'

Recovery: 100%
 Brown silt, clay loam near top with shale fragments and some sand. At 11.0' BLS contact with brown to tan, mottled sand. Moist, cohesive.

INT 2

0913 Complete drilling at B-002 BH.
Moving to B-001 BH.

Louis Ibarra departed site to
return some H70 Equipment
not longer needed and to
go into Columbus BH to obtain
HRS information.

0918 B-001 BH 0.0' - 1.0'

* INTERVAL 1	
SPT	13 0.0 - 0.5'
	13 0.5 - 1.0'
	8 1.0 - 1.5'

Gravel to 11. brown silt, clay loam
with few shale fragments. dry to
very slightly moist loam, cohesive,
mottled. few sand grains.

0930 B-001 BH 5.0 - 6.5'

* INTERVAL 2	
SPT	8 5.0 - 5.5'
	10 5.5 - 6.0'
	14 6.0 - 6.5'

Recovery: 100%

Brown. silt and clay loam. Some
shale and quartz fragments present.
Slightly moist, mottled, and cohesive.
few gravel particles.

0936 B-001 BH 10.0 - 11.5'

SPT	11 10.0 - 10.5'
	11 10.5 - 11.0'
	16 11.0 - 11.5'

Recovery: 100%

Brown. silt, clay loam, few
sand particles w/ some shale
fragments, to a sharp contact
with brown to tan and white
sand. Medium sand, moist,
cohesive. No water.

0940 Complete drilling at AOC-B.
Drillers pull off the site.
Move to decon area to
decon Augers.
Gravel hobs at AOC-B.

0945	E.P. calls Matt Alexander to inform him of progress. Are finished with drilling program. Are beginning to de-mobilize at the station and will depart for S.A. today.		
0955	E.P. calls Mr. Saul Almer at Rickenbacker ANGB to inform him of status and findings during field screening at the PA/SI. Field screening for BTEx was Non Detect at all intervals at all locations.		
1010	E.P. calls John Morris at Optech to inform him of the situation		
1036	E.P. calls DAN WYATT (ANGRC/CEUR PM) to brief him on the PA/SI. Inform him all drilling is completed. Since no water was found above the bedrock, optional drilling for Pierometers		
1100	E.P. calls Charles Harkness (Surveyor) to schedule surveying at the site. Problems with contacts w/ main office. We will talk again on Monday (6-6-94) to resolve issues and will schedule surveying to occur by mid-next week.	1100	E.P. prepares Chain-of-Custody on samples and departs site to deliver samples to FED-EX for delivery.
1115			J.B. is packing equipment box and supervisor drillers who are preparing equipment to depart the site.
1135		1135	Depnt FED-EX. Samples are away. Return to Zanesville ANG.

1205 Return to Site. J.B. completing site clean-up. Drillers departed Site at 1135 after clean-up.

Site looks in excellent condition.

DRUM INVENTORY

Drums placed on wooden pallets and placed in gravel area of AOC-A east of Bldg S.

Drum	CONTENTS
1)	B-001 BH Soil Cuttings
	B-002 BH "
2)	B-003 BH "
	B-002 BH "
3)	A-001 BH "
	A-002 BH "
4)	A-007 BH "
5)	A-006 BH "

- 6) A-004 BH "
- 7) A-002 BH "
- A-003 BH "
- 8) A-005 BH "

9) DECON WATER

TOTAL OF 9 DRUMS

Equipment Boxes are sealed and will be shipped out on Monday. MSGT Connelly will look over it for us.

1215 E.P. and J.B. reset stakes over borehole locations to guide Surveyors.

E.P. and J.B. depart Zanesville ANGCS.

Go to Hotel for shower and to

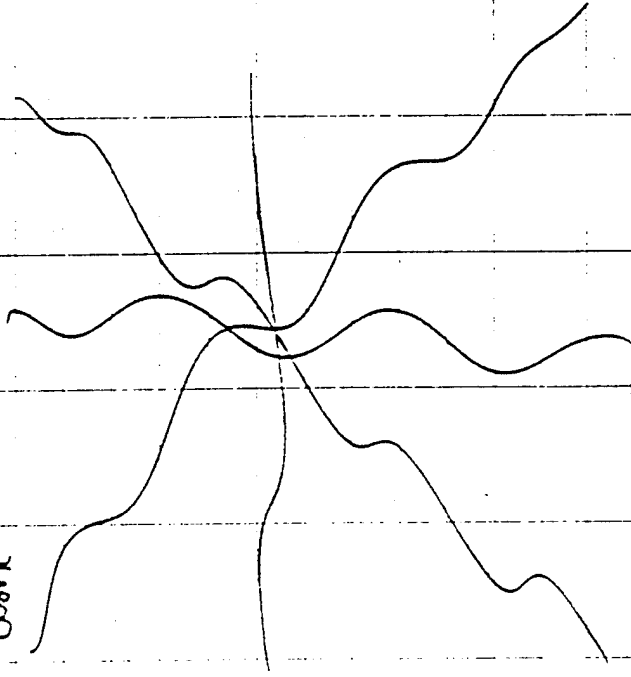
check out.

1310 Depart Hotel and drive to Columbus.

1530 Arrive to turn in Rental Vehicle.

1600 Arrive at Airport.

2130 Arrive in S.A. End of
Zanesville ANG-S PA/SI Field
Work



Paul E. Lucht 6/3/94 (13.0)

Boxes: CLASS 85

ITEM 147110

CONTRACTOR Equipment Outfits



"Rite in the Rain"
ALL-WEATHER WRITING PAPER

Name Joe Byrd, JR.
Project Scientist

Address 4100 N.W. Loop 410, #230

SAN ANTONIO, TX 78229

Phone (210) 731-0000

Project ZANESVILLE 1308-191

FEDEX - 1342-6486-1

HAECO -

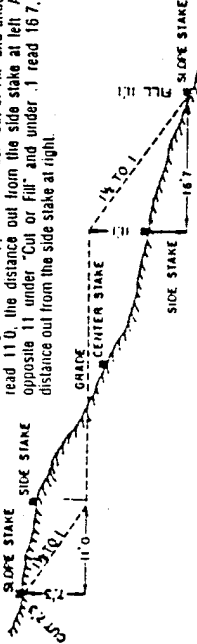
"Rite in the Rain"---a unique all-weather writing surface created to shed water and to enhance the written image. Makes it possible to write sharp, legible field data in any kind of weather.

a product of

J. L. DARLING CORPORATION
TACOMA, WA 98421-3696 USA

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width, Side Slopes 1½ to 1.
In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Distance out from Side or Shoulder Stake	Distance out from Side or Shoulder Stake										Distance out from Side or Shoulder Stake
	0	1	2	3	4	5	6	7	8	9	
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
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21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
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32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

DAY 1

THURSDAY

2 June 1984

0705
0730

Leave hotel
ON BASE

Prepare for drillers arrival

1030

Drillers arrive

1050

Safety Mtg.
JB, EPZ, LY, Roger, Rob, Johnny
Discussed sites, ticks, RL to
Hospital

1105

SL met Delg.
A-004 BH

DONE

1210

Drillers Lake lunch (0.8)

1300

Begin Drilling
A-

Drill Ahk of ACC-A

1715

DONE drilling for day

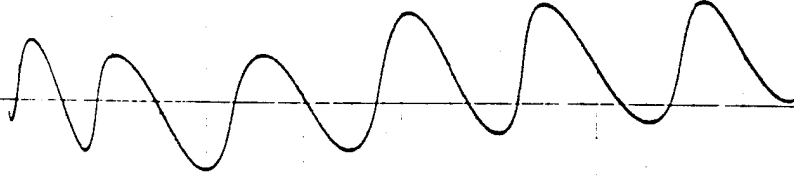
Break down equipment

1830

Leave base
Go to FEDEX

1922

At hotel



Jan Byrd Jr

12.0 hrs

FRIDAY 3 June 1994

0648 Leave hotel
0700 On base

Prep for drilling

0740 Drillers arriving
0800 Start Drilling

0940 Done drilling

Drillers decom equipment

Begin packing our equipment
for shipment via
ABF freight systems

1040 Done packing boxes.
Drillers are still packing
holes

EP goes to FEDEX to
drop off samples

Drillers are done & leave.

7 set all teams in a
central location for bag
movement when base
personnel return on Monday

1150 EP Returns.
We mark BH's for
surveys. Police Area

1223 Leave base
at hotel

1312 ^{EST} Leave hotel

2230 ^{EST} Home
~~1312~~

10.3

15.9 hrs

Frank Byrd, JR

Chromatogram

Sample Name : 9406119-058

Sample #: SC ;S

Page 1 of 1

FileName : l:\data\tchrom\pest\varc\C__137.raw

Date : 06/16/94 06:45

Method : DIESEL.C.ins

Time of Injection: 06/16/94 06:10

Start Time : 1.00 min

End Time : 34.66 min

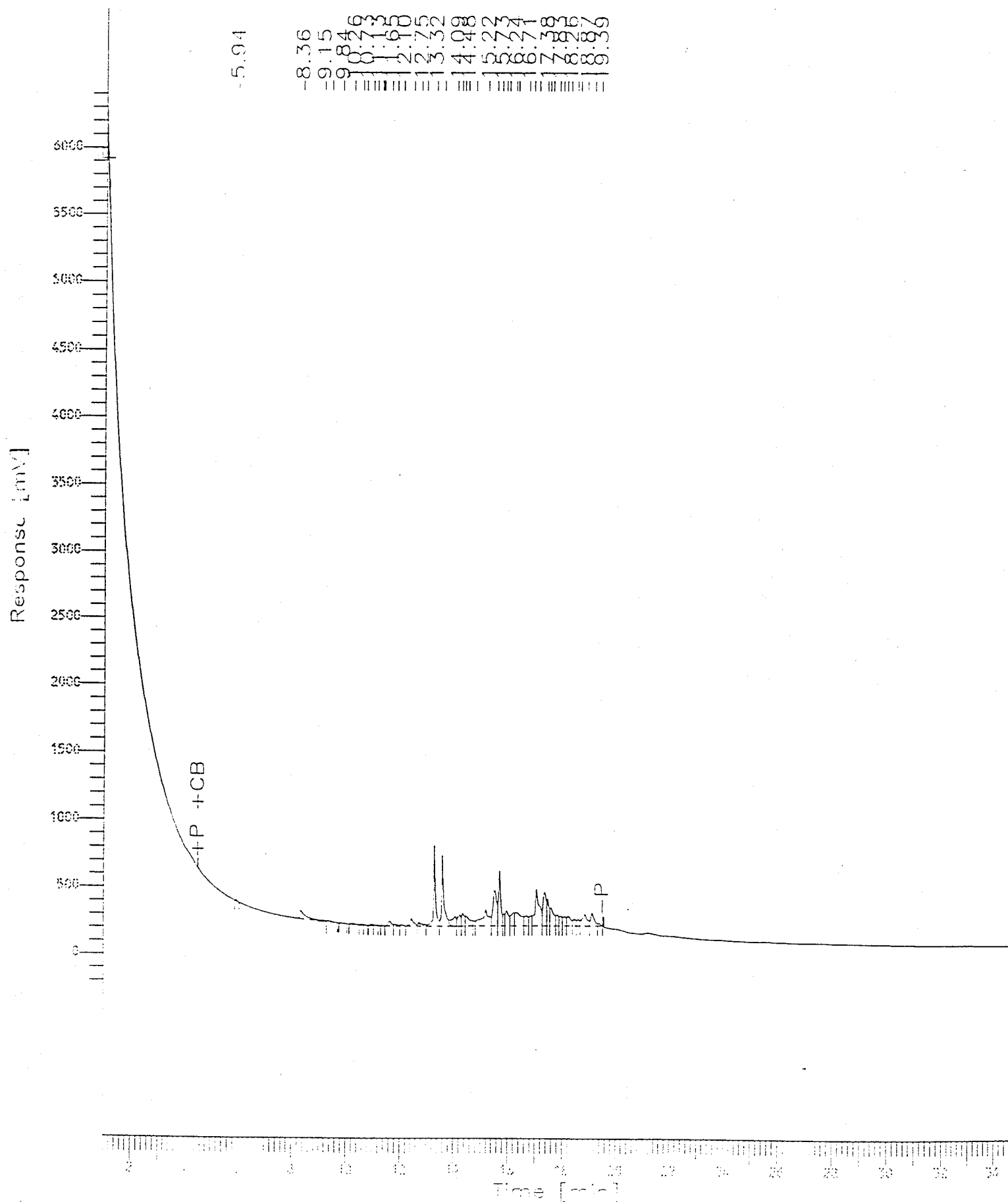
Low Point : -227.82 mV

High Point : 6432.95 mV

Scale Factor: 1

Plot Offset: -228 mV

Plot Scale: 6661 mV



Software Version: 3.2 <16C20>
 Sample Name : 9406119-06B Time : 6/14/94 08:44 AM
 Sample Number: SC ;S Study : MOOSD
 Operator : SEG
 Instrument : VARC Channel : A A/D mV Range : 10000
 AutoSampler : NONE
 Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 6/13/94 07:09 PM
 Delay Time : 1.00 min.
 End Time : 34.66 min.
 Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\DATA\TCHROM\PEST\VARC\C__094.raw
 Result File : C:\WINDOWS\TEMP\rst3844.rst
 Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
 Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
 Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
 Sequence File : <none>

Inj. Volume : 1 ul Area Reject : 100.00
 Sample Amount : 1.0000 Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	6.020	77280.00	9853.13	BB	1.0000e6	0.0415	20.8892	0.0000
2	7.974	2325.00	780.93	BB	1.0000e6	0.0415	20.8892	0.0000
3	8.219	6265.00	949.27	BV	1.0000e6	0.0415	20.8892	0.0000
4	8.464	15780.00	1444.71	VV	1.0000e6	0.0415	20.8892	0.0000
5	8.890	759678.13	21188.90	VV	1.0000e6	0.0415	20.8892	0.0000
6	9.446	429097.50	14506.94	VV	1.0000e6	0.0415	20.8892	0.0000
7	10.250	76219.06	6362.75	VV	1.0000e6	0.0415	20.8892	0.0000
8	10.543	79763.91	6468.09	VV	1.0000e6	0.0415	20.8892	0.0000
9	10.769	265495.63	9638.21	VV	1.0000e6	0.0415	20.8892	0.0000
10	11.582	53264.84	6965.16	VV	1.0000e6	0.0415	20.8892	0.0000
11	11.751	25889.69	4464.73	VV	1.0000e6	0.0415	20.8892	0.0000
12	11.887	81980.47	7474.37	VV	1.0000e6	0.0415	20.8892	0.0000
13	12.128	34071.17	4321.59	VV	9.9999e5	0.0415	20.8892	0.0000
14	12.264	149445.63	5112.41	VV	1.0000e6	0.0415	20.8892	0.0000
15	12.885	537169.38	18872.63	VV	9.9999e5	0.0415	20.8892	0.0000
16	13.794	116116.17	10310.37	VV	1.0000e6	0.0415	20.8892	0.0000
17	13.978	112097.11	9160.47	VV	1.0000e6	0.0415	20.8892	0.0000
18	14.211	257250.47	11253.09	VV	1.0000e6	0.0415	20.8892	0.0000
19	14.616	123853.59	11899.86	VV	1.0000e6	0.0415	20.8892	0.0000
20	14.758	251707.03	11668.24	VV	1.0000e6	0.0415	20.8892	0.0000
21	15.277	98583.59	9288.56	VB	1.0000e6	0.0415	20.8892	0.0000
22	15.771	1390719.88	259191.27	BB	1.0000e6	0.0415	20.8892	0.0000
23	16.326	791.25	1308.47	BB	1.0000e6	0.0415	20.8892	0.0000
24	17.024	16106.91	1481.43	BV	9.9999e5	0.0415	20.8892	0.0000
25	17.362	14617.99	2529.59	VB	1.0000e6	0.0415	20.8892	0.0000
26	17.559	9070.00	1063.91	BB	1.0000e6	0.0415	20.8892	0.0000
27	18.045	19454.89	3517.81	BB	1.0000e6	0.0415	20.8892	0.0000
28	18.633	25800.00	4654.70	BB	9.9999e5	0.0415	20.8892	0.0000
		5029894.00	455731.56			1.1628	584.8963	0.0006

END

Sample Name : 9406119-06B

FileName : L:\DATA\TCHROM\PEST\VARC\C__094.raw

Method : DIESEL.C.ins

Start Time : 1.00 min

Scale Factor: 1

End Time : 34.66 min

Plot Offset: -139 mV

Sample #: SC ;S

Date : 6/14/94 08:45 AM

Time of Injection: 6/13/94 07:09 PM

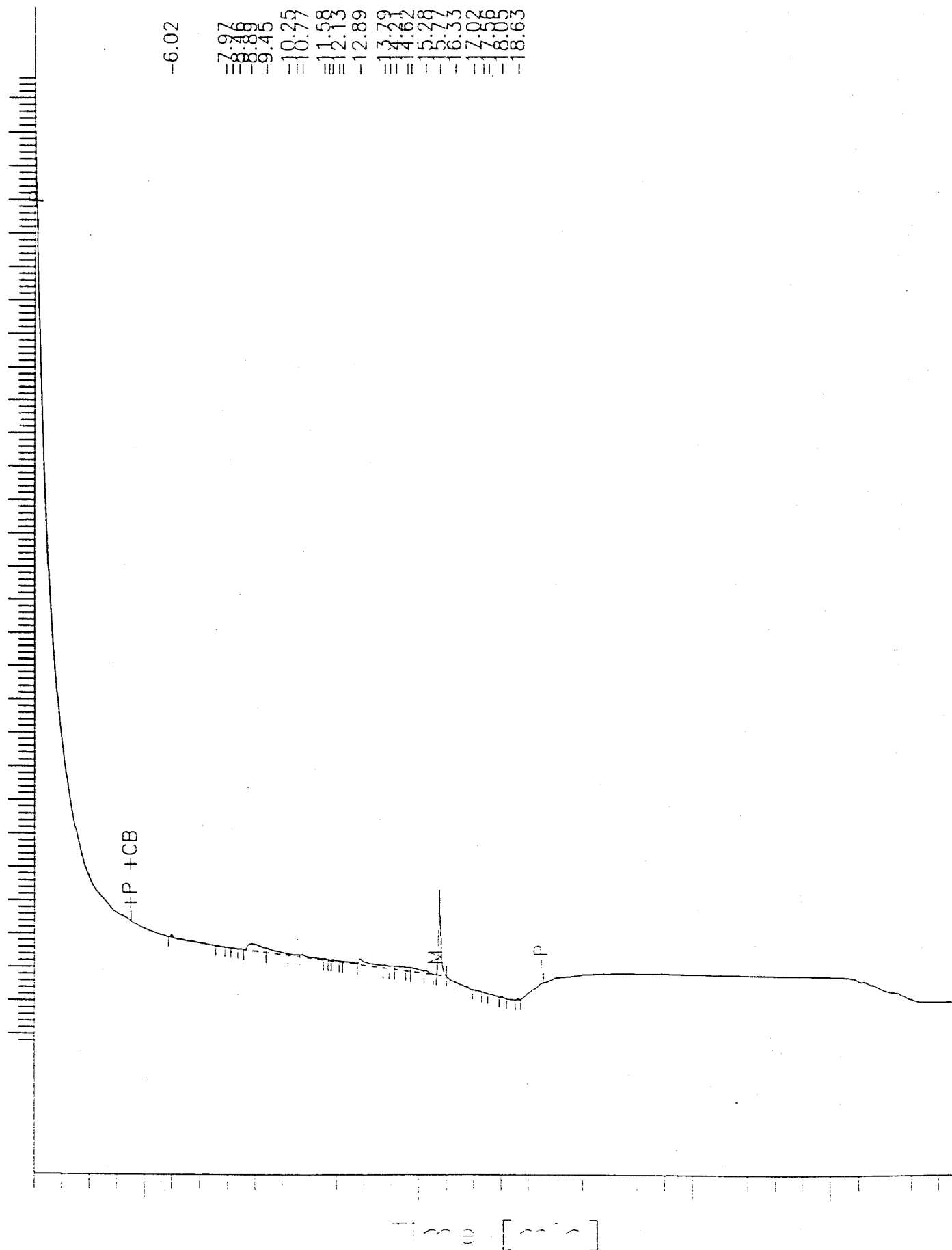
Low Point : -138.63 mV

Plot Scale: 2912 mV

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High Point : 2772.89 mV

Response [mV]



Software Version: 3.2 <16C20>
Sample Name : 9406119-06B Time : 06/13/94 19:44
Sample Number: SC ;S Study : MODSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/13/94 19:09
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__094.raw
Result File : l:\data\tchrom\pest\varc\C__094.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

DIESEL Area Percent Report								
Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/ Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	6.020	164272.50	9763.58	BV	1.0000e6	0.0415	61.4149	0.0000
2	7.974	5618.75	1023.49	VV	1.0000e6	0.0415	61.4149	0.0000
3	8.219	18491.72	1519.86	VV	1.0000e6	0.0415	61.4149	0.0000
4	8.464	39588.13	3081.67	VV	1.0000e6	0.0415	61.4149	0.0000
5	8.890	953859.38	24681.85	VV	1.0000e6	0.0415	61.4149	0.0000
6	9.446	790530.00	20424.21	VV	9.9999e5	0.0415	61.4149	0.0000
7	10.250	213141.88	15779.01	VV	1.0000e6	0.0415	61.4149	0.0000
8	10.543	219646.25	17161.26	VV	1.0000e6	0.0415	61.4149	0.0000
9	10.769	947705.00	21314.87	VV	1.0000e6	0.0415	61.4149	0.0000
10	11.582	222731.48	22183.14	VV	1.0000e6	0.0415	61.4149	0.0000
11	11.751	122028.16	20419.65	VV	1.0000e6	0.0415	61.4149	0.0000
12	11.887	368564.69	24020.49	VV	1.0000e6	0.0415	61.4149	0.0000
13	12.128	176193.44	21919.51	VV	1.0000e6	0.0415	61.4149	0.0000
14	12.264	764393.44	23301.15	VV	1.0000e6	0.0415	61.4149	0.0000
15	12.885	1841226.88	39764.79	VV	1.0000e6	0.0415	61.4149	0.0000
16	13.794	441906.00	35162.72	VV	1.0000e6	0.0415	61.4149	0.0000
17	13.978	423715.00	34814.59	VV	1.0000e6	0.0415	61.4149	0.0000
18	14.211	911845.75	37922.97	VV	1.0000e6	0.0415	61.4149	0.0000
19	14.616	437850.38	40331.60	VV	1.0000e6	0.0415	61.4149	0.0000
20	14.758	1090606.75	40721.54	VV	9.9999e5	0.0415	61.4149	0.0000
21	15.277	961856.06	40599.12	VV	1.0000e6	0.0415	61.4149	0.0000
22	15.771	2520164.75	292819.69	VE	1.0000e6	0.0415	61.4149	0.0000
23	16.326	724570.00	25709.40	EV	1.0000e6	0.0415	61.4149	0.0000
24	17.024	177568.16	10518.38	VV	1.0000e6	0.0415	61.4149	0.0000
25	17.362	92249.00	8985.18	VV	1.0000e6	0.0415	61.4149	0.0000
26	17.559	99548.13	6008.39	VV	1.0000e6	0.0415	61.4149	0.0000
27	18.045	32416.06	4833.59	VB	1.0000e6	0.0415	61.4149	0.0000
28	18.633	25800.00	4654.70	BB	9.9999e5	0.0415	61.4149	0.0000
		14788088.00	849440.31			1.1628	1719.6178	0.0002

END

Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__094.TX0

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Software Version: 3.2 <16C20>
Sample Name : 9406119-08B Time : 6/14/94 08:39 AM
Sample Number: SC ;S Study : MODSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 6/13/94 05:47 PM
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\DATA\TCHROM\PEST\VARC\C__092.raw
Result File : C:\WINDOWS\TEMP\~rst3844.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : <none>

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

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DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	6.042	91160.00	10990.99	BB	1.0000e6	0.0415	12.2358	0.0000
2	8.005	3550.00	1015.78	BB	1.0000e6	0.0415	12.2358	0.0000
3	8.222	5925.00	795.05	BB	1.0000e6	0.0415	12.2358	0.0000
4	8.482	18220.00	1701.29	BV	1.0000e6	0.0415	12.2358	0.0000
5	8.901	675372.50	19496.61	VV	1.0000e6	0.0415	12.2358	0.0000
6	9.480	289096.25	11661.09	VV	1.0000e6	0.0415	12.2358	0.0000
7	10.283	53181.25	3526.47	VV	1.0000e6	0.0415	12.2358	0.0000
8	10.799	54610.00	4906.71	VB	1.0000e6	0.0415	12.2358	0.0000
9	11.617	14888.44	3139.72	BV	1.0000e6	0.0415	12.2358	0.0000
10	11.917	22481.25	3516.17	VB	1.0000e6	0.0415	12.2358	0.0000
11	12.911	50270.63	3409.25	BB	1.0000e6	0.0415	12.2358	0.0000
12	13.818	10565.00	1975.44	BB	1.0000e6	0.0415	12.2358	0.0000
13	14.240	6810.00	842.07	BV	1.0000e6	0.0415	12.2358	0.0000
14	14.644	11350.00	1184.16	VB	1.0000e6	0.0415	12.2358	0.0000
15	15.313	6795.00	1641.86	BB	1.0000e6	0.0415	12.2358	0.0000
16	15.803	1383359.88	258369.67	BB	1.0000e6	0.0415	12.2358	0.0000
17	16.488	6800.00	1525.25	BB	1.0000e6	0.0415	12.2358	0.0000
18	16.675	5410.94	1877.15	BV	1.0000e6	0.0415	12.2358	0.0000
19	16.864	19634.88	3018.38	VV	1.0000e6	0.0415	12.2358	0.0000
20	17.036	44744.06	3999.19	VB	1.0000e6	0.0415	12.2358	0.0000
21	17.717	16440.66	2685.34	BV	1.0000e6	0.0415	12.2358	0.0000
22	17.880	68686.25	5961.84	VV	1.0000e6	0.0415	12.2358	0.0000
23	18.566	47581.56	4442.89	VV	1.0000e6	0.0415	12.2358	0.0000
24	18.864	15471.37	2207.99	VB	1.0000e6	0.0415	12.2358	0.0000
25	19.127	2595.75	766.52	BV	1.0000e6	0.0415	12.2358	0.0000
26	19.267	21249.12	3419.53	VB	1.0000e6	0.0415	12.2358	0.0000
		2946249.75	358076.44			1.0798	318.1302	0.0009

=====

END

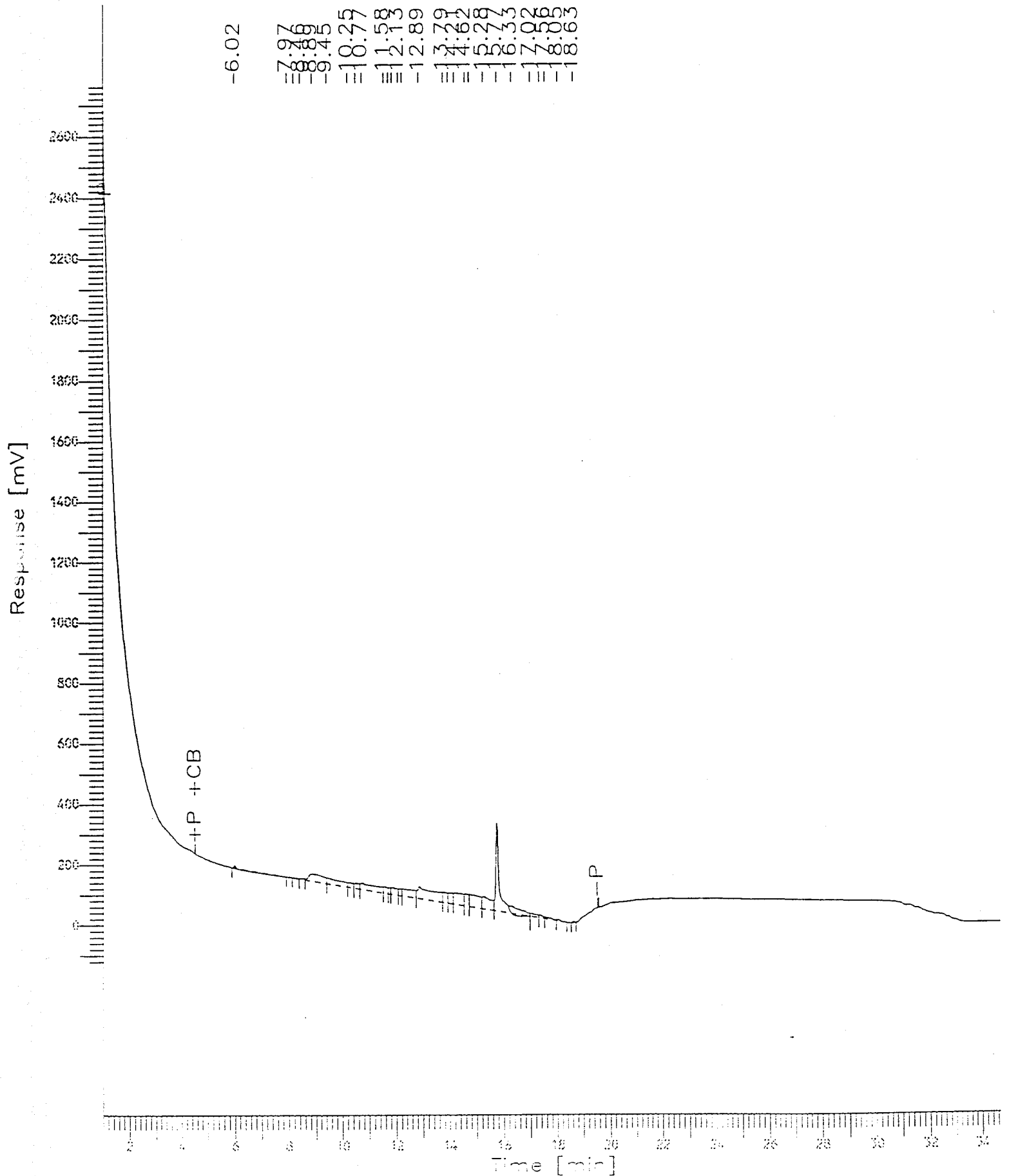
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Chromatogram

Page 1 of 1

Sample Name : 9406119-068
 FileName : l:\data\tchrom\pest\varc\C__094.raw
 Method : DIESEL.C.ins
 Start Time : 1.00 min
 Scale Factor: 1

Sample #: SC ;S
 Date : 06/13/94 19:44
 Time of Injection: 06/13/94 19:09
 Low Point : -138.63 mV
 High Point : 2772.89 mV
 End Time : 34.66 min
 Plot Offset: -139 mV
 Plot Scale: 2912 mV



Sample Name : 9406119-108

Sample #: SC ;S

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FileName : L:\DATA\TCHROM\PEST\VARC\C__097.raw

Date : 6/14/94 08:52 AM

Method : DIESEL.C.ins

Time of Injection: 6/13/94 09:17 PM

Start Time : 1.00 min

End Time : 34.66 min

Low Point : -120.75 mV

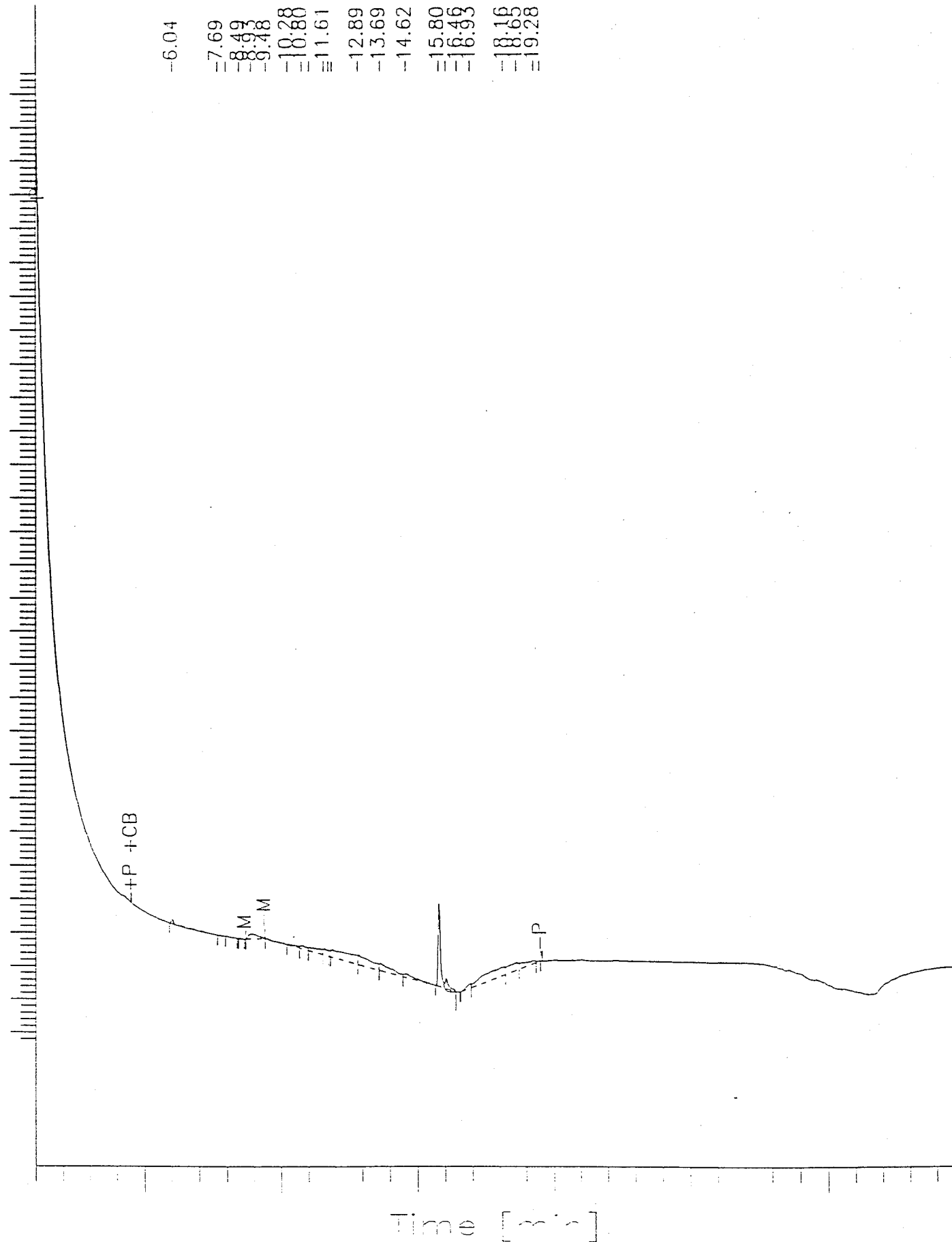
High Point : 2766.58 mV

Scale Factor: 1

Plot Offset: -121 mV

Plot Scale: 2887 mV

Response [mV]



Software Version: 3.2 <16C20>

Sample Name : 9406119-118

Time : 06/16/94 02:38

Sample Number: SC ;S

Study : MOOSD

Operator : SEG

Instrument : VARC

Channel : A A/D mV Range : 10000

AutoSampler : NONE

Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/16/94 02:03

Delay Time : 1.00 min.

End Time : 34.66 min.

Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__131.raw

Result File : l:\data\tchrom\pest\varc\C__131.rst

Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins

Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc

Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp

Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul

Area Reject : 100.00

Sample Amount : 1.0000

Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	5.944	36770.00	11298.47	BB	1.0000e6	0.0415	140.8922	0.0000
2	6.695	22790.00	2873.33	BB	1.0000e6	0.0415	140.8922	0.0000
3	7.353	16560.00	3858.47	BB	1.0000e6	0.0415	140.8922	0.0000
4	7.719	22942.50	2693.11	BV	1.0000e6	0.0415	140.8922	0.0000
5	7.946	5292.50	3424.17	VB	1.0000e6	0.0415	140.8922	0.0000
6	8.398	517281.25	48109.91	BV	1.0000e6	0.0415	140.8922	0.0000
7	8.633	414849.38	28245.19	VV	1.0000e6	0.0415	140.8922	0.0000
8	9.129	168663.75	21391.92	VV	1.0000e6	0.0415	140.8922	0.0000
9	9.477	152355.63	16528.33	VV	1.0000e6	0.0415	140.8922	0.0000
10	9.863	68968.13	7574.95	VB	1.0000e6	0.0415	140.8922	0.0000
11	10.255	149405.31	21814.90	BV	1.0000e6	0.0415	140.8922	0.0000
12	10.590	87951.56	14664.98	VV	1.0000e6	0.0415	140.8922	0.0000
13	10.729	28183.59	7016.94	VB	1.0000e6	0.0415	140.8922	0.0000
14	10.991	312964.69	60957.36	BE	1.0000e6	0.0415	140.8922	0.0000
15	11.300	60980.00	7558.65	EB	1.0000e6	0.0415	140.8922	0.0000
16	11.696	168722.50	30191.36	BV	1.0000e6	0.0415	140.8922	0.0000
17	11.871	23979.06	3657.95	VV	1.0000e6	0.0415	140.8922	0.0000
18	12.113	22449.38	2713.42	VV	1.0000e6	0.0415	140.8922	0.0000
19	12.332	107018.75	19886.88	VB	1.0000e6	0.0415	140.8922	0.0000
20	12.613	6300.00	1615.25	BB	1.0000e6	0.0415	140.8922	0.0000
21	12.751	41431.25	6275.60	BV	1.0000e6	0.0415	140.8922	0.0000
22	12.847	17065.55	5039.87	VV	1.0000e6	0.0415	140.8922	0.0000
23	12.958	120840.31	22974.88	VV	1.0000e6	0.0415	140.8922	0.0000
24	13.236	6802.81	998.25	VB	1.0000e6	0.0415	140.8922	0.0000
25	13.403	16844.69	1219.54	BB	1.0000e6	0.0415	140.8922	0.0000
26	13.551	294037.50	47417.07	BV	1.0000e6	0.0415	140.8922	0.0000
27	13.773	219847.03	30279.96	VV	9.9999e5	0.0415	140.8922	0.0000
28	13.867	148614.69	30561.75	VV	1.0000e6	0.0415	140.8922	0.0000
29	13.983	237523.44	35294.37	VV	1.0000e6	0.0415	140.8922	0.0000
30	14.145	514085.94	57040.80	VV	1.0000e6	0.0415	140.8922	0.0000
31	14.232	203213.75	51661.60	VV	1.0000e6	0.0415	140.8922	0.0000
32	14.691	2116966.25	95173.77	VV	1.0000e6	0.0415	140.8922	0.0000
33	14.777	444734.28	90568.59	VV	1.0000e6	0.0415	140.8922	0.0000
34	14.965	936240.31	97930.44	VV	1.0000e6	0.0415	140.8922	0.0000
35	15.219	1948774.00	124246.13	VV	1.0000e6	0.0415	140.8922	0.0000
36	15.333	446453.66	112341.62	VV	1.0000e6	0.0415	140.8922	0.0000
37	15.559	1621105.63	132683.11	VV	1.0000e6	0.0415	140.8922	0.0000
38	15.734	3549113.00	435565.47	VV	1.0000e6	0.0415	140.8922	0.0000
39	16.002	2197872.50	147556.34	VV	1.0000e6	0.0415	140.8922	0.0000
40	16.232	1678403.63	149561.17	VV	1.0000e6	0.0415	140.8922	0.0000
41	16.457	2025448.38	153031.78	VV	1.0000e6	0.0415	140.8922	0.0000
42	16.595	693523.19	141496.28	VV	1.0000e6	0.0415	140.8922	0.0000
43	16.719	1245939.00	149835.53	VV	1.0000e6	0.0415	140.8922	0.0000
44	16.879	1275840.00	133024.05	VV	9.9999e5	0.0415	140.8922	0.0000
45	17.001	1051278.88	123576.45	VV	1.0000e6	0.0415	140.8922	0.0000
46	17.203	1532736.25	124505.21	VV	9.9999e5	0.0415	140.8922	0.0000
47	17.365	1465467.50	117342.97	VV	1.0000e6	0.0415	140.8922	0.0000
48	17.630	1754682.75	105821.72	VV	1.0000e6	0.0415	140.8922	0.0000
49	17.929	439918.59	74329.51	VV	1.0000e6	0.0415	140.8922	0.0000
50	18.071	717446.06	79799.25	VV	9.9999e5	0.0415	140.8922	0.0000

Chromatogram

Sample Name : 9406119-08B

FileName : L:\DATA\TCHROM\PEST\VARC\C__092.raw

Method : DIESEL.C.ins

Start Time : 1.00 min

End Time : 34.66 min

Scale Factor: 1

Plot Offset: -123 mV

Sample #: SC ;S

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Date : 6/14/94 08:39 AM

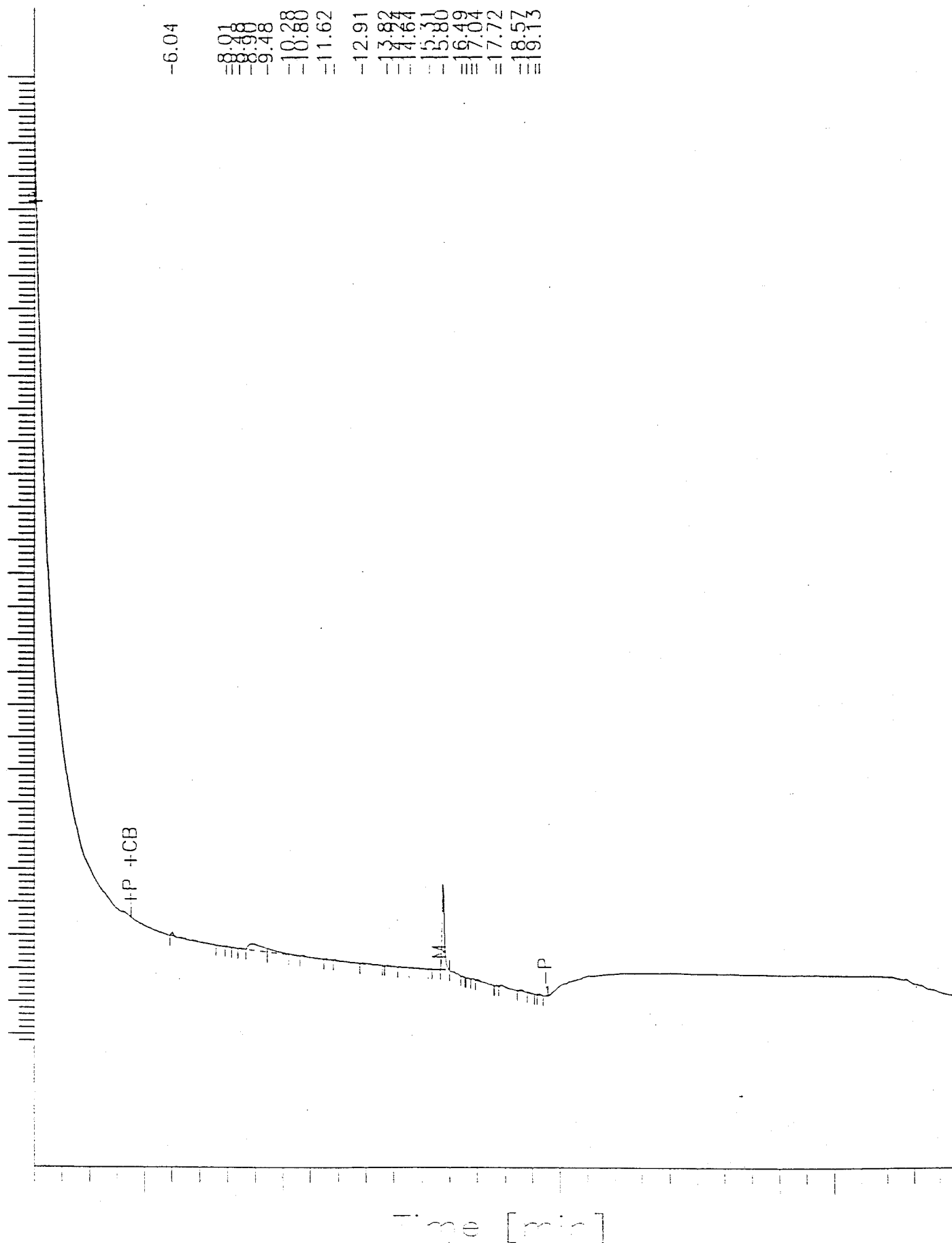
Time of Injection: 6/13/94 05:47 PM

Low Point : -122.81 mV

High Point : 2808.38 mV

Plot Scale: 2931 mV

Response [mV]



Software Version: 3.2 <16C20>

Sample Name : 9406119-07B

Time : 06/16/94 06:03

Sample Number: SC ;S

Study : MODSD

Operator : SEG

Instrument : VARC

Channel : A A/D mV Range : 10000

AutoSampler : NONE

Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/16/94 05:29

Delay Time : 1.00 min.

End Time : 34.66 min.

Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__136.raw

Result File : l:\data\tchrom\pest\varc\C__136.rst

Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins

Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc

Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp

Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul

Area Reject : 100.00

Sample Amount : 1.0000

Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	5.928	50515.31	12760.12	BB	1.0000e6	0.0415	181.0080	0.0000
2	7.885	26469.38	3038.73	BB	1.0000e6	0.0415	181.0080	0.0000
3	8.336	802435.00	69421.80	BE	1.0000e6	0.0415	181.0080	0.0000
4	8.822	135590.00	11770.06	EV	1.0000e6	0.0415	181.0080	0.0000
5	9.133	36318.75	4913.79	VV	1.0000e6	0.0415	181.0080	0.0000
6	9.303	437505.00	66177.59	VV	1.0000e6	0.0415	181.0080	0.0000
7	9.818	114422.50	9349.88	VV	1.0000e6	0.0415	181.0080	0.0000
8	10.185	590361.88	41672.33	VV	1.0000e6	0.0415	181.0080	0.0000
9	10.545	46760.23	10184.80	VV	1.0000e6	0.0415	181.0080	0.0000
10	10.639	82909.06	10160.82	VB	1.0000e6	0.0415	181.0080	0.0000
11	10.958	54279.53	12738.30	BV	1.0000e6	0.0415	181.0080	0.0000
12	11.097	55680.63	9402.99	VB	1.0000e6	0.0415	181.0080	0.0000
13	11.502	4895844.50	785709.31	BE	1.0000e6	0.0415	181.0080	0.0000
14	12.068	174440.00	17561.61	EV	1.0000e6	0.0415	181.0080	0.0000
15	12.418	1460005.00	147471.80	VV	1.0000e6	0.0415	181.0080	0.0000
16	12.723	212329.06	37293.54	VV	1.0000e6	0.0415	181.0080	0.0000
17	12.897	485875.00	46063.62	VV	1.0000e6	0.0415	181.0080	0.0000
18	13.285	4827688.00	1.01e6	VV	9.9999e5	0.0415	181.0080	0.0000
19	13.593	4255839.50	730039.63	VE	1.0000e6	0.0415	181.0080	0.0000
20	13.980	348560.00	50367.79	EV	1.0000e6	0.0415	181.0080	0.0000
21	14.053	396245.94	61222.18	VV	1.0000e6	0.0415	181.0080	0.0000
22	14.222	546607.31	78460.68	VV	1.0000e6	0.0415	181.0080	0.0000
23	14.342	541295.94	82740.89	VV	1.0000e6	0.0415	181.0080	0.0000
24	14.453	474078.13	59352.07	VB	1.0000e6	0.0415	181.0080	0.0000
25	14.922	78332.50	11826.59	BV	1.0000e6	0.0415	181.0080	0.0000
26	15.180	884989.69	97099.70	VV	1.0000e6	0.0415	181.0080	0.0000
27	15.519	2951952.50	316643.72	VV	1.0000e6	0.0415	181.0080	0.0000
28	15.705	2095630.88	382893.25	VE	1.0000e6	0.0415	181.0080	0.0000
29	15.853	380690.00	55424.36	EV	1.0000e6	0.0415	181.0080	0.0000
30	15.964	228219.53	47684.38	VV	1.0000e6	0.0415	181.0080	0.0000
31	16.206	847710.00	77530.48	VV	1.0000e6	0.0415	181.0080	0.0000
32	16.287	304603.66	77519.13	VV	9.9999e5	0.0415	181.0080	0.0000
33	16.348	726081.56	75760.92	VV	1.0000e6	0.0415	181.0080	0.0000
34	16.688	561440.31	49846.33	VV	1.0000e6	0.0415	181.0080	0.0000
35	17.049	3567385.00	303988.50	VV	1.0000e6	0.0415	181.0080	0.0000
36	17.371	1395558.25	212632.33	VV	1.0000e6	0.0415	181.0080	0.0000
37	17.452	1122154.38	196861.02	VV	1.0000e6	0.0415	181.0080	0.0000
38	17.581	1257356.50	129312.20	VV	1.0000e6	0.0415	181.0080	0.0000
39	17.806	551551.06	73463.45	VV	1.0000e6	0.0415	181.0080	0.0000
40	17.929	563767.31	65879.56	VV	1.0000e6	0.0415	181.0080	0.0000
41	18.220	1318246.88	81250.91	VV	1.0000e6	0.0415	181.0080	0.0000
42	18.465	452902.66	61121.58	VV	1.0000e6	0.0415	181.0080	0.0000
43	18.597	383051.25	50340.82	VV	1.0000e6	0.0415	181.0080	0.0000
44	18.840	1438375.00	107168.02	VV	1.0000e6	0.0415	181.0080	0.0000
45	19.123	1233165.00	116683.12	VV	1.0000e6	0.0415	181.0080	0.0000
46	19.378	189640.63	27045.29	VB	1.0000e6	0.0415	181.0080	0.0000
		43584868.00	5.99e6			1.9104	3326.3643	0.0001

END

=====

Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__136.TX0

Chromatogram

Sample Name : 9406119-073

FileName : l:\data\tchrom\pest\varc\C_136.raw

Method : DIESEL.C.ins

Start Time : 1.00 min

Scale Factor: 1

End Time : 34.66 min

Plot Offset: -202 mV

Sample #: SC ;S

Date : 06/16/94 06:04

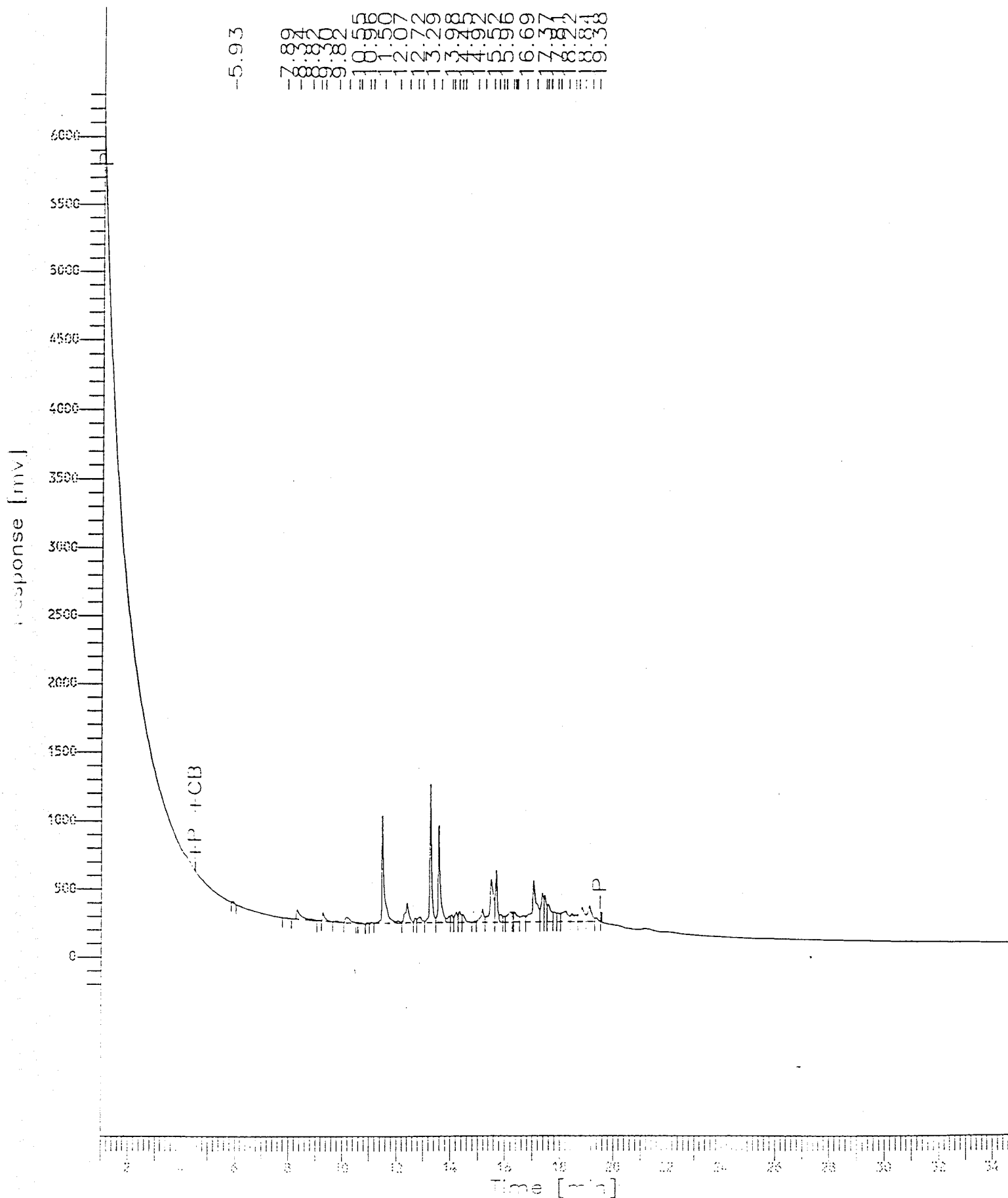
Time of Injection: 06/16/94 05:29

Low Point : -201.90 mV

Plot Scale: 6540 mV

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High Point : 6338.54 mV



Software Version: 3.2 <16C20>
 Sample Name : 9406119-088 Time : 06/13/94 18:22
 Sample Number: SC ;S Study : MCO5D
 Operator : SEG
 Instrument : VARC Channel : A A/D mV Range : 10000
 AutoSampler : NONE
 Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/13/94 17:47
 Delay Time : 1.00 min.
 End Time : 34.66 min.
 Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__092.raw
 Result File : l:\data\tchrom\pest\varc\C__092.rst
 Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
 Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
 Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
 Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul Area Reject : 100.00
 Sample Amount : 1.0000 Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	6.042	91160.00	10990.99	BB	1.0000e6	0.0415	46.1247	0.0000
2	8.005	3550.00	1015.78	BB	1.0000e6	0.0415	46.1247	0.0000
3	8.222	6923.13	822.69	BV	1.0000e6	0.0415	46.1247	0.0000
4	8.482	27565.00	2084.55	VV	1.0000e6	0.0415	46.1247	0.0000
5	8.901	768193.75	21050.67	VV	1.0000e6	0.0415	46.1247	0.0000
6	9.480	491100.00	14835.29	VV	1.0000e6	0.0415	46.1247	0.0000
7	10.283	200920.94	8946.68	VV	1.0000e6	0.0415	46.1247	0.0000
8	10.799	446324.38	11769.32	VV	1.0000e6	0.0415	46.1247	0.0000
9	11.617	202152.66	12306.13	VV	1.0000e6	0.0415	46.1247	0.0000
10	11.917	664600.63	13570.78	VV	1.0000e6	0.0415	46.1247	0.0000
11	12.911	869947.50	16617.45	VV	1.0000e6	0.0415	46.1247	0.0000
12	13.818	531953.44	19894.43	VV	1.0000e6	0.0415	46.1247	0.0000
13	14.240	517604.53	21162.98	VV	1.0000e6	0.0415	46.1247	0.0000
14	14.644	1005885.00	24214.25	VV	1.0000e6	0.0415	46.1247	0.0000
15	15.313	677572.31	29639.67	VV	1.0000e6	0.0415	46.1247	0.0000
16	15.803	2739125.25	291289.06	VE	1.0000e6	0.0415	46.1247	0.0000
17	16.488	367310.00	24733.29	EV	1.0000e6	0.0415	46.1247	0.0000
18	16.675	204761.64	20542.15	VV	1.0000e6	0.0415	46.1247	0.0000
19	16.864	166613.52	19643.72	VV	1.0000e6	0.0415	46.1247	0.0000
20	17.036	530723.88	18782.66	VV	1.0000e6	0.0415	46.1247	0.0000
21	17.717	89231.64	10813.60	VV	1.0000e6	0.0415	46.1247	0.0000
22	17.880	307407.03	13247.62	VV	1.0000e6	0.0415	46.1247	0.0000
23	18.566	119867.93	8164.72	VV	1.0000e6	0.0415	46.1247	0.0000
24	18.864	41721.48	4382.21	VV	1.0000e6	0.0415	46.1247	0.0000
25	19.127	8069.24	1757.66	VV	9.9999e5	0.0415	46.1247	0.0000
26	19.267	26067.03	3931.17	VB	1.0000e6	0.0415	46.1247	0.0000
		11106353.00	626209.63			1.0798	1199.2418	0.0002

END

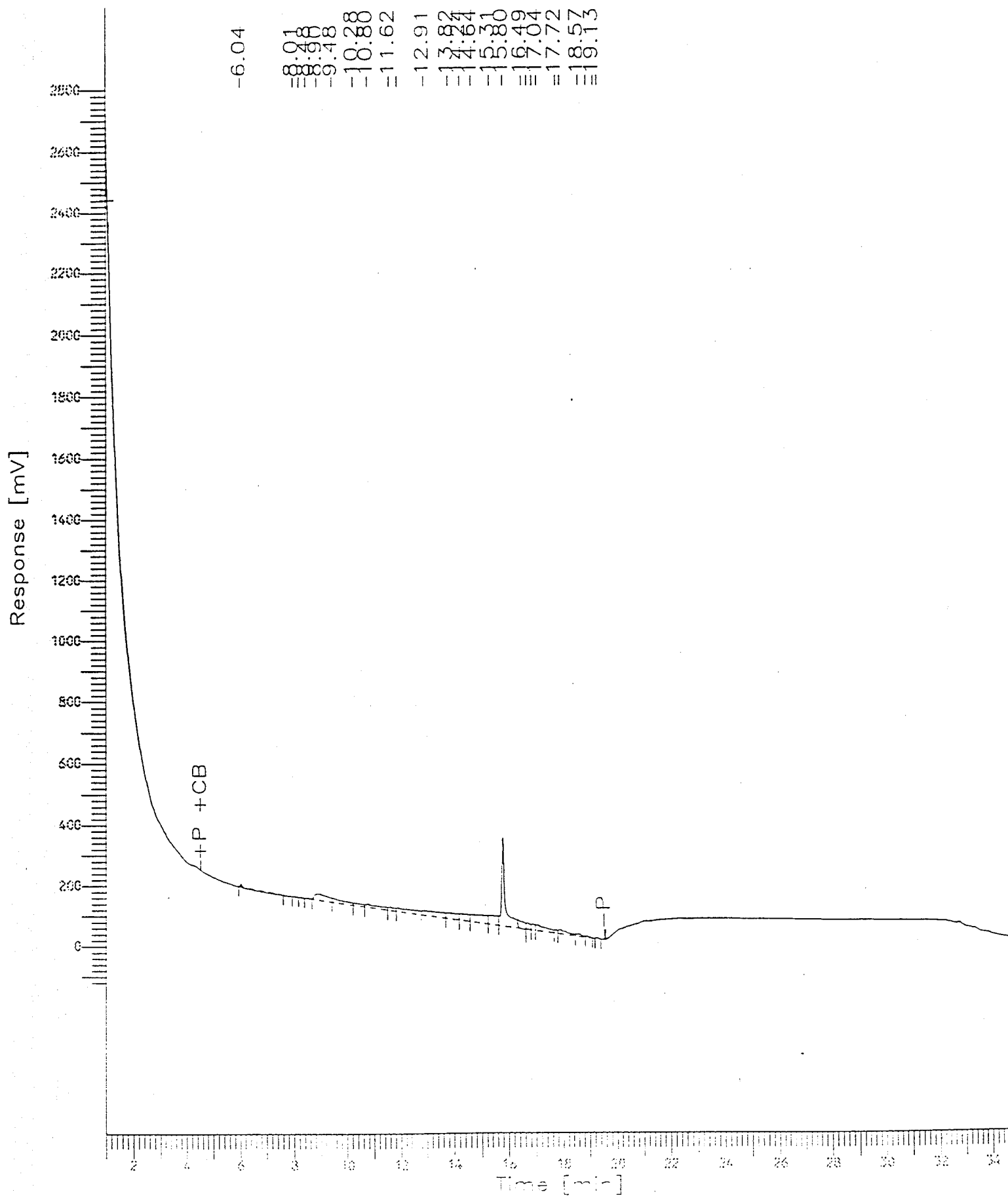
Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__092.TX0

Chromatogram

Sample Name : 9406119-088
 FileName : l:\data\tchrom\pest\varc\C__092.raw
 Method : DIESEL.C.ins
 Start Time : 1.00 min
 Scale Factor : 1

Sample #: SC ;S
 Date : 06/13/94 18:22
 Time of Injection: 06/13/94 17:47
 Low Point : -122.81 mV
 High Point : 2808.38 mV
 End Time : 34.66 min
 Plot Offset: -123 mV
 Plot Scale: 2931 mV

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Software Version: 3.2 <16C20>

Sample Name : 9406119-098 Time : 06/13/94 21:10
Sample Number: SC ;S Study : MOOSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/13/94 20:35
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__096.raw
Result File : l:\data\tchrom\pest\varc\C__096.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

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DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	6.033	186462.50	13833.05	BB	9.9999e5	0.0415	26.7348	0.0000
2	8.226	6559.84	1236.46	BB	1.0000e6	0.0415	26.7348	0.0000
3	8.444	18405.16	3829.85	BB	1.0000e6	0.0415	26.7348	0.0000
4	8.825	608210.63	14823.73	BB	1.0000e6	0.0415	26.7348	0.0000
5	9.914	62690.00	1650.23	BB	1.0000e6	0.0415	26.7348	0.0000
6	10.772	62120.16	5349.13	BB	1.0000e6	0.0415	26.7348	0.0000
7	11.581	7354.95	2365.25	BB	1.0000e6	0.0415	26.7348	0.0000
8	11.753	16369.23	2187.43	BV	9.9999e5	0.0415	26.7348	0.0000
9	11.893	43475.82	6812.60	VB	1.0000e6	0.0415	26.7348	0.0000
10	12.901	580806.31	29186.41	BV	1.0000e6	0.0415	26.7348	0.0000
11	13.099	385645.19	28414.82	VV	1.0000e6	0.0415	26.7348	0.0000
12	13.437	473345.84	29330.23	VV	1.0000e6	0.0415	26.7348	0.0000
13	13.674	496985.81	29499.78	VV	1.0000e6	0.0415	26.7348	0.0000
14	13.814	257955.23	29784.72	VV	1.0000e6	0.0415	26.7348	0.0000
15	14.072	339263.72	25245.26	VV	1.0000e6	0.0415	26.7348	0.0000
16	14.251	290892.50	24508.59	VV	9.9999e5	0.0415	26.7348	0.0000
17	14.378	173651.33	21760.74	VV	1.0000e6	0.0415	26.7348	0.0000
18	14.458	78086.56	19785.79	VV	1.0000e6	0.0415	26.7348	0.0000
19	14.636	229450.86	18153.40	VV	9.9999e5	0.0415	26.7348	0.0000
20	14.802	141012.19	14453.81	VV	1.0000e6	0.0415	26.7348	0.0000
21	15.005	141421.33	10528.29	VV	9.9999e5	0.0415	26.7348	0.0000
22	15.148	22190.70	7315.33	VV	1.0000e6	0.0415	26.7348	0.0000
23	15.305	70914.61	6922.21	VV	1.0000e6	0.0415	26.7348	0.0000
24	15.379	34679.69	5162.51	VV	1.0000e6	0.0415	26.7348	0.0000
25	15.578	3915.00	571.99	VB	1.0000e6	0.0415	26.7348	0.0000
26	15.788	1407590.00	228974.30	BE	1.0000e6	0.0415	26.7348	0.0000
27	16.301	30010.00	3440.13	EB	1.0000e6	0.0415	26.7348	0.0000
28	16.794	22740.00	2987.28	BB	9.9999e5	0.0415	26.7348	0.0000
29	17.100	3400.00	637.73	BB	1.0000e6	0.0415	26.7348	0.0000
30	17.258	11857.89	2132.86	BV	1.0000e6	0.0415	26.7348	0.0000
31	17.388	23022.97	3033.24	VE	1.0000e6	0.0415	26.7348	0.0000
32	17.585	630.00	262.62	EV	9.9999e5	0.0415	26.7348	0.0000
33	17.708	10909.14	2044.38	VB	9.9999e5	0.0415	26.7348	0.0000
34	18.095	33212.81	2961.12	BV	1.0000e6	0.0415	26.7348	0.0000
35	18.639	85354.34	5940.89	VV	1.0000e6	0.0415	26.7348	0.0000
36	18.838	16223.48	2507.38	VV	9.9999e5	0.0415	26.7348	0.0000
37	18.982	16141.33	1729.02	VV	9.9999e5	0.0415	26.7348	0.0000
38	19.137	17258.09	2580.16	VV	1.0000e6	0.0415	26.7348	0.0000
39	19.255	27259.45	3834.50	VB	1.0000e6	0.0415	26.7348	0.0000
		6437475.00	615777.19			1.5197	1042.6591	0.0006

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END

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Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__096.TXT

Chromatogram

Sample Name : 9406119-098

FileName : l:\data\tchrom\pest\varc\C__096.raw

Method : DIESEL.C.ins

Start Time : 1.00 min

Scale Factor: 1

End Time : 34.66 min

Plot Offset: -156 mV

Sample #: SC ;S

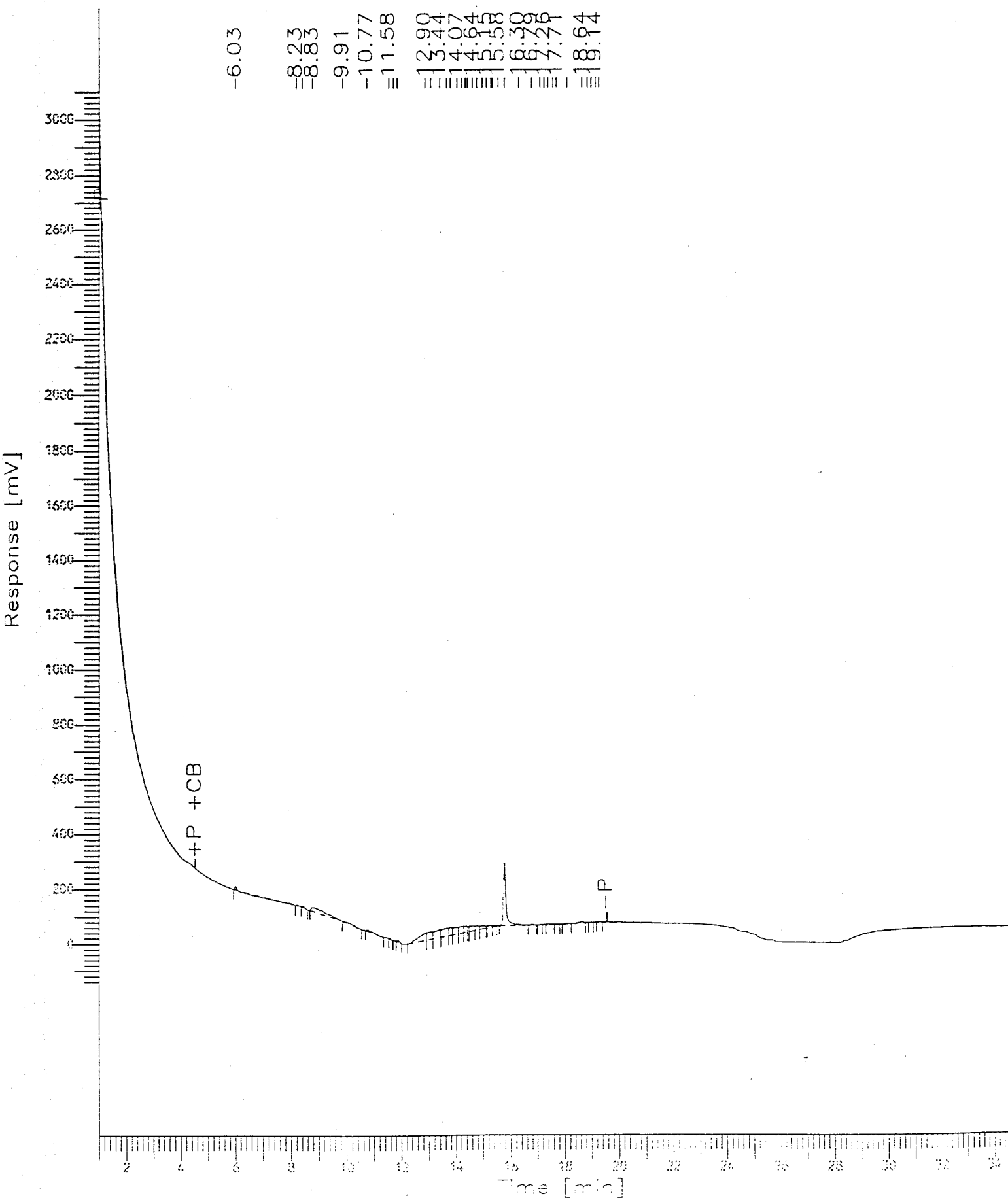
Date : 06/13/94 21:10

Time of Injection: 06/13/94 20:35

Low Point : -155.57 mV

Plot Scale: 3267 mV

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Software Version: 3.2 <16C20>
Sample Name : 9406119-108 Time : 6/14/94 08:52 AM
Sample Number: SC ;S Study : MCDSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 6/13/94 09:17 PM
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\DATA\TCHROM\PEST\VARC\C__097.raw
Result File : C:\WINDOWS\TEMP\rst3844.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : <none>

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

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DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	6.041	75792.50	14503.62	BB	1.0000e6	0.0415	39.5829	0.0000
2	7.693	4127.19	504.75	BV	9.9999e5	0.0415	39.5829	0.0000
3	7.994	5353.13	1124.56	VB	1.0000e6	0.0415	39.5829	0.0000
4	8.489	5710.16	1059.53	BB	1.0000e6	0.0415	39.5829	0.0000
5	8.932	368835.00	14896.36	BB	1.0000e6	0.0415	39.5829	0.0000
6	9.481	9317.50	1573.50	BV	1.0000e6	0.0415	39.5829	0.0000
7	10.279	95327.81	2653.12	VV	1.0000e6	0.0415	39.5829	0.0000
8	10.797	157196.88	10503.59	VV	1.0000e6	0.0415	39.5829	0.0000
9	11.072	384237.81	10058.30	VV	9.9999e5	0.0415	39.5829	0.0000
10	11.613	207340.78	19120.18	VV	1.0000e6	0.0415	39.5829	0.0000
11	11.783	92585.08	18639.50	VV	1.0000e6	0.0415	39.5829	0.0000
12	11.914	1410973.13	23179.53	VV	1.0000e6	0.0415	39.5829	0.0000
13	12.891	1015436.56	28021.93	VV	1.0000e6	0.0415	39.5829	0.0000
14	13.691	645974.69	21239.72	VV	1.0000e6	0.0415	39.5829	0.0000
15	14.616	282957.81	11217.52	VB	9.9999e5	0.0415	39.5829	0.0000
16	15.803	1413420.75	247801.80	BE	9.9999e5	0.0415	39.5829	0.0000
17	16.066	280580.00	36583.90	EB	9.9999e5	0.0415	39.5829	0.0000
18	16.457	3740.00	840.53	BB	1.0000e6	0.0415	39.5829	0.0000
19	16.934	173640.03	13879.39	BV	1.0000e6	0.0415	39.5829	0.0000
20	18.163	1724647.50	25352.87	VV	1.0000e6	0.0415	39.5829	0.0000
21	18.649	703316.38	23461.42	VV	1.0000e6	0.0415	39.5829	0.0000
22	19.280	448366.88	9398.26	VV	1.0000e6	0.0415	39.5829	0.0000
23	19.500	22286.80	1174.51	VB	1.0000e6	0.0415	39.5829	0.0000
		9531165.00	536788.38			0.9552	910.4075	0.0002

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END

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51	18.266	964303.44	78202.19	VV	1.0000e6	0.0415	140.8922	0.0000
52	18.485	501284.53	62888.62	VV	1.0000e6	0.0415	140.8922	0.0000
53	18.622	852250.31	58190.98	VV	1.0000e6	0.0415	140.8922	0.0000
54	19.184	250872.19	22082.77	VB	1.0000e6	0.0415	140.8922	0.0000

		33925392.00	3.41e6			2.2426	7608.1733	0.0002

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=====
END
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```

Report Stored in ASCII File: l:\data\tchrom\pest\varc\C___131.TX0

Chromatogram

Sample Name : 9406119-11B

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Name      : l:\data\tchrom\pest\varc\C__131.raw

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method      : DIESELCL.ins

```

Start Time : 1.00 min

Scale Factor: 1

End Time : 34.66 min

Plot Offset: -264 mV

Sample #: SC ;S

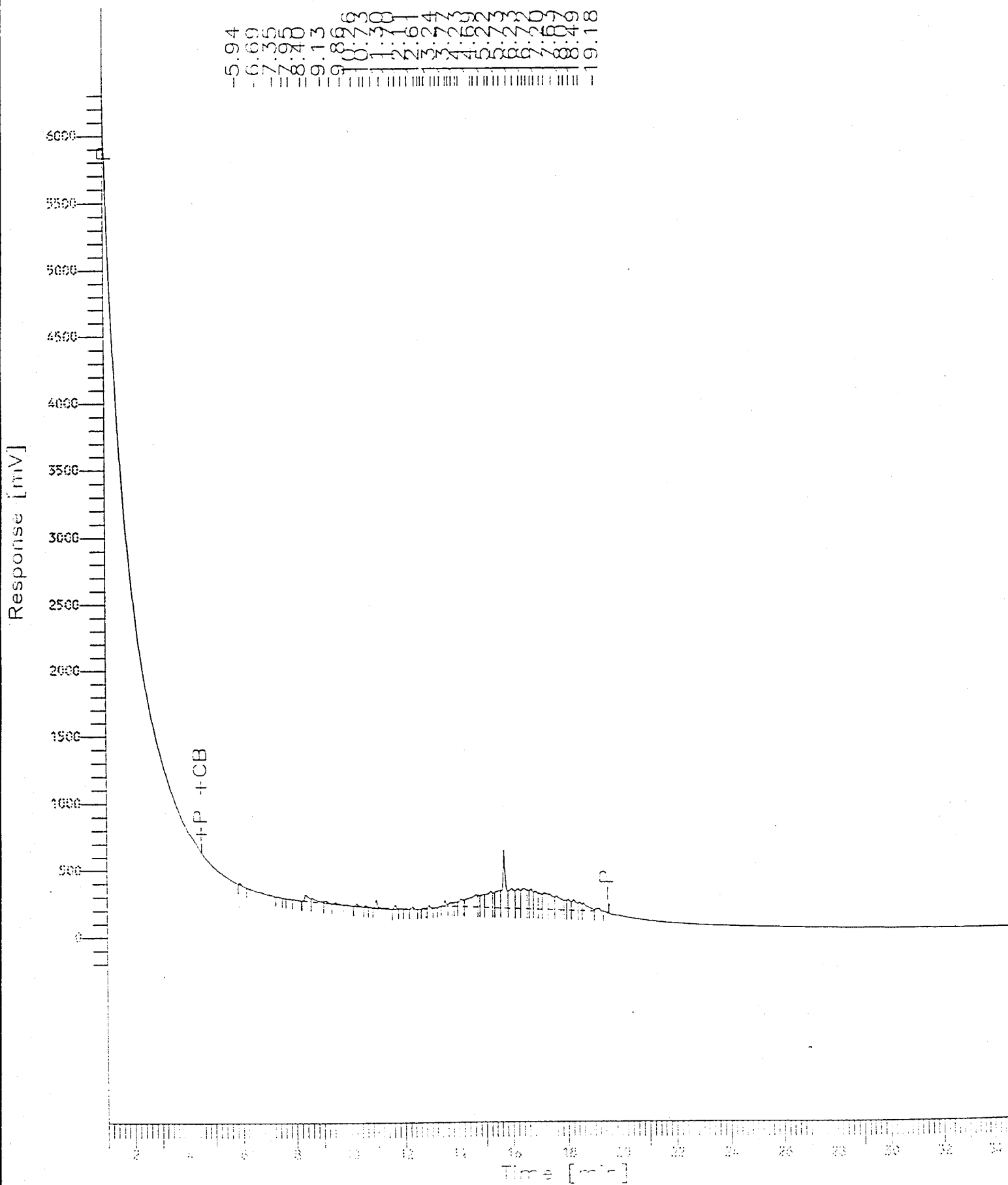
Date : 06/16/94 02:38

Time of Injection: 06/16/94 02:03

Low Point : -263.78 mV

Plot Scale: 6626 mV

Page 1 of 1



Software Version: 3.2 <16C20>

Sample Name : 9406119-138

Time : 06/16/94 03:19

Sample Number: SC ;S

Study : MODSD

Operator : SEG

Instrument : VARC

Channel : A A/D mV Range : 10000

AutoSampler : NCNE

Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/16/94 02:44

Delay Time : 1.00 min.

End Time : 34.66 min.

Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__132.raw

Result File : l:\data\tchrom\pest\varc\C__132.rst

Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins

Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc

Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp

Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul

Area Reject : 100.00

Sample Amount : 1.0000

Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	4.717	4719977.50	477009.75	BV	1.0000e6	0.0415	563.9883	0.0000
2	4.965	4254255.00	548959.50	VV	1.0000e6	0.0415	563.9883	0.0000
3	5.207	12165640.00	1.38e6	VV	1.0000e6	0.0415	563.9883	0.0000
4	5.385	7656277.50	984412.88	VB	1.0000e6	0.0415	563.9883	0.0000
5	5.682	45790.00	26144.42	BB	9.9999e5	0.0415	563.9883	0.0000
6	5.855	7255687.50	729032.25	BV	1.0000e6	0.0415	563.9883	0.0000
7	6.077	1599656.25	356814.53	VB	1.0000e6	0.0415	563.9883	0.0000
8	6.272	1150619.38	263958.66	BV	1.0000e6	0.0415	563.9883	0.0000
9	6.379	313526.88	71358.56	VV	1.0000e6	0.0415	563.9883	0.0000
10	6.497	464583.13	117619.04	VB	1.0000e6	0.0415	563.9883	0.0000
11	6.667	2621272.50	488326.28	BB	1.0000e6	0.0415	563.9883	0.0000
12	7.142	282880.00	56957.58	BB	1.0000e6	0.0415	563.9883	0.0000
13	7.339	203720.94	62099.88	BB	1.0000e6	0.0415	563.9883	0.0000
14	7.668	47834.38	14092.99	BB	1.0000e6	0.0415	563.9883	0.0000
15	8.164	17264.06	3393.78	BV	1.0000e6	0.0415	563.9883	0.0000
16	8.371	744945.63	89481.31	VV	1.0000e6	0.0415	563.9883	0.0000
17	8.617	423046.25	48409.80	VV	1.0000e6	0.0415	563.9883	0.0000
18	9.127	297027.50	37674.91	VV	1.0000e6	0.0415	563.9883	0.0000
19	9.338	49586.88	17400.51	VV	1.0000e6	0.0415	563.9883	0.0000
20	9.460	238696.25	44981.08	VV	1.0000e6	0.0415	563.9883	0.0000
21	9.832	351115.63	53569.36	VB	1.0000e6	0.0415	563.9883	0.0000
22	10.240	410083.13	66571.01	BV	1.0000e6	0.0415	563.9883	0.0000
23	10.580	425255.94	68263.16	VB	1.0000e6	0.0415	563.9883	0.0000
24	10.976	730766.81	112103.76	BE	1.0000e6	0.0415	563.9883	0.0000
25	11.163	40050.00	9418.64	EV	1.0000e6	0.0415	563.9883	0.0000
26	11.287	86446.41	15706.45	VV	1.0000e6	0.0415	563.9883	0.0000
27	11.397	158356.25	19262.88	VB	1.0000e6	0.0415	563.9883	0.0000
28	11.684	430486.25	62364.01	BV	1.0000e6	0.0415	563.9883	0.0000
29	11.954	112287.19	15787.93	VV	1.0000e6	0.0415	563.9883	0.0000
30	12.079	117216.41	15016.93	VV	1.0000e6	0.0415	563.9883	0.0000
31	12.322	480644.38	50914.53	VV	1.0000e6	0.0415	563.9883	0.0000
32	12.603	203851.88	28149.92	VV	1.0000e6	0.0415	563.9883	0.0000
33	12.752	622978.44	70147.09	VV	1.0000e6	0.0415	563.9883	0.0000
34	12.954	565529.69	78846.85	VV	1.0000e6	0.0415	563.9883	0.0000
35	13.059	380418.59	71763.20	VV	1.0000e6	0.0415	563.9883	0.0000
36	13.393	1408760.63	95853.13	VV	1.0000e6	0.0415	563.9883	0.0000
37	13.568	1112120.88	102664.49	VV	1.0000e6	0.0415	563.9883	0.0000
38	13.783	1181981.38	129389.92	VV	1.0000e6	0.0415	563.9883	0.0000
39	13.974	1776185.25	153896.41	VV	1.0000e6	0.0415	563.9883	0.0000
40	14.204	1907370.88	171792.36	VV	1.0000e6	0.0415	563.9883	0.0000
41	14.340	1578705.00	215000.39	VV	1.0000e6	0.0415	563.9883	0.0000
42	14.553	2853842.75	212674.31	VV	1.0000e6	0.0415	563.9883	0.0000
43	14.776	2859323.75	266758.25	VV	1.0000e6	0.0415	563.9883	0.0000
44	14.902	2708331.75	288311.31	VV	1.0000e6	0.0415	563.9883	0.0000
45	15.102	2759801.25	285380.78	VV	1.0000e6	0.0415	563.9883	0.0000
46	15.301	3407668.75	324905.69	VV	1.0000e6	0.0415	563.9883	0.0000
47	15.427	4397481.00	357159.34	VV	1.0000e6	0.0415	563.9883	0.0000
48	15.735	7706067.50	672894.19	VV	1.0000e6	0.0415	563.9883	0.0000
49	15.925	1880440.50	386728.19	VV	1.0000e6	0.0415	563.9883	0.0000
50	15.992	3455205.25	407714.50	VV	1.0000e6	0.0415	563.9883	0.0000

=====
Software Version: 3.2 <16C20>
Sample Name : 9406119-12B Time : 06/16/94 04:00
Sample Number: SC ;S Study : MODSD
Operator : SEG
Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/16/94 03:25
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__133.raw
Result File : l:\data\tchrom\pest\varc\C__133.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

=====

Table with 8 columns: Peak #, Ret Time [min], Area [UV-sec], Height [uV], BL, Area/Amount, RF VALUE, DIESEL AMT. PPM, STD RF VALUE. Contains 30 rows of peak data and a summary row at the bottom.

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END
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Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__133.TXT

Chromatogram

Page 1 of 1

Sample Name : 9406119-12B

Sample #: SC ;S

FileName : l:\data\tchrom\pest\varc\C__133.raw

Date : 06/16/94 04:00

Method : DIESEL.C.ins

Time of Injection: 06/16/94 03:25

Start Time : 1.00 min

End Time : 34.66 min

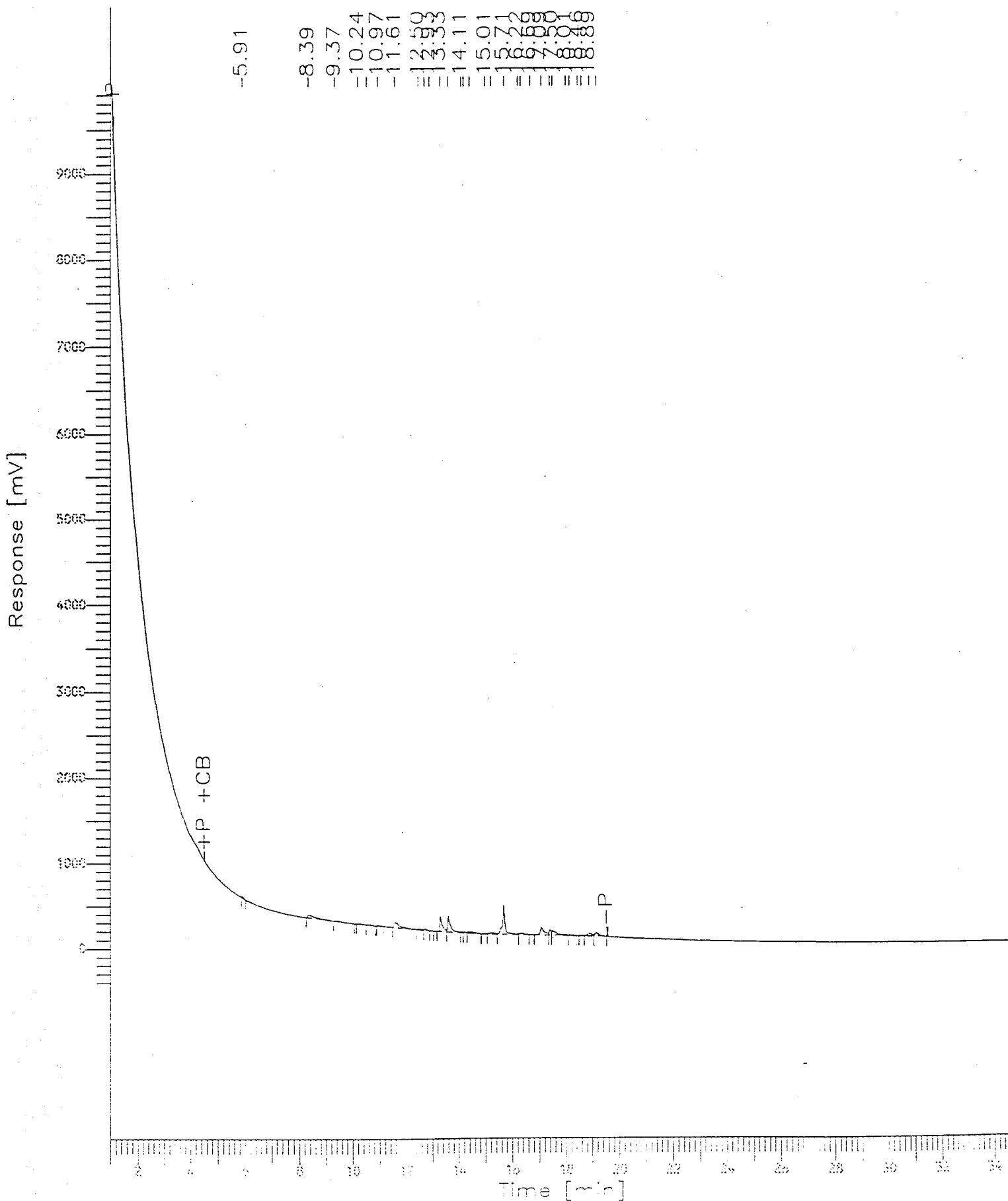
Low Point : -446.76 mV

High Point : 9999.99 mV

Scale Factor: 1

Plot Offset: -447 mV

Plot Scale: 10447 mV



31	16.126	1060372.50	355263.94	VV	1.0000e6	0.0415	563.9883	0.0000
32	16.259	3700951.75	385166.25	VV	1.0000e6	0.0415	563.9883	0.0000
33	16.413	3068620.50	401896.38	VV	1.0000e6	0.0415	563.9883	0.0000
34	16.509	5207397.00	403964.06	VV	1.0000e6	0.0415	563.9883	0.0000
35	16.715	2054210.25	348806.31	VV	1.0000e6	0.0415	563.9883	0.0000
36	16.882	3943028.75	395164.13	VV	1.0000e6	0.0415	563.9883	0.0000
37	16.997	3215613.50	345319.69	VV	9.9999e5	0.0415	563.9883	0.0000
38	17.172	2491743.50	314330.88	VV	1.0000e6	0.0415	563.9883	0.0000
39	17.316	5295190.00	327490.56	VV	1.0000e6	0.0415	563.9883	0.0000
40	17.605	1802490.63	259238.14	VV	1.0000e6	0.0415	563.9883	0.0000
41	17.728	2667151.75	260179.31	VV	1.0000e6	0.0415	563.9883	0.0000
42	17.920	3438481.75	221885.47	VV	1.0000e6	0.0415	563.9883	0.0000
43	18.192	3824856.25	184593.73	VV	1.0000e6	0.0415	563.9883	0.0000
44	18.617	2472351.50	133888.42	VV	1.0000e6	0.0415	563.9883	0.0000
45	19.062	436560.31	52855.53	VV	1.0000e6	0.0415	563.9883	0.0000
46	19.196	462525.31	47656.70	VB	1.0000e6	0.0415	563.9883	0.0000

1.35e8

1.50e7

2.7410

37223.2266

0.0001

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END
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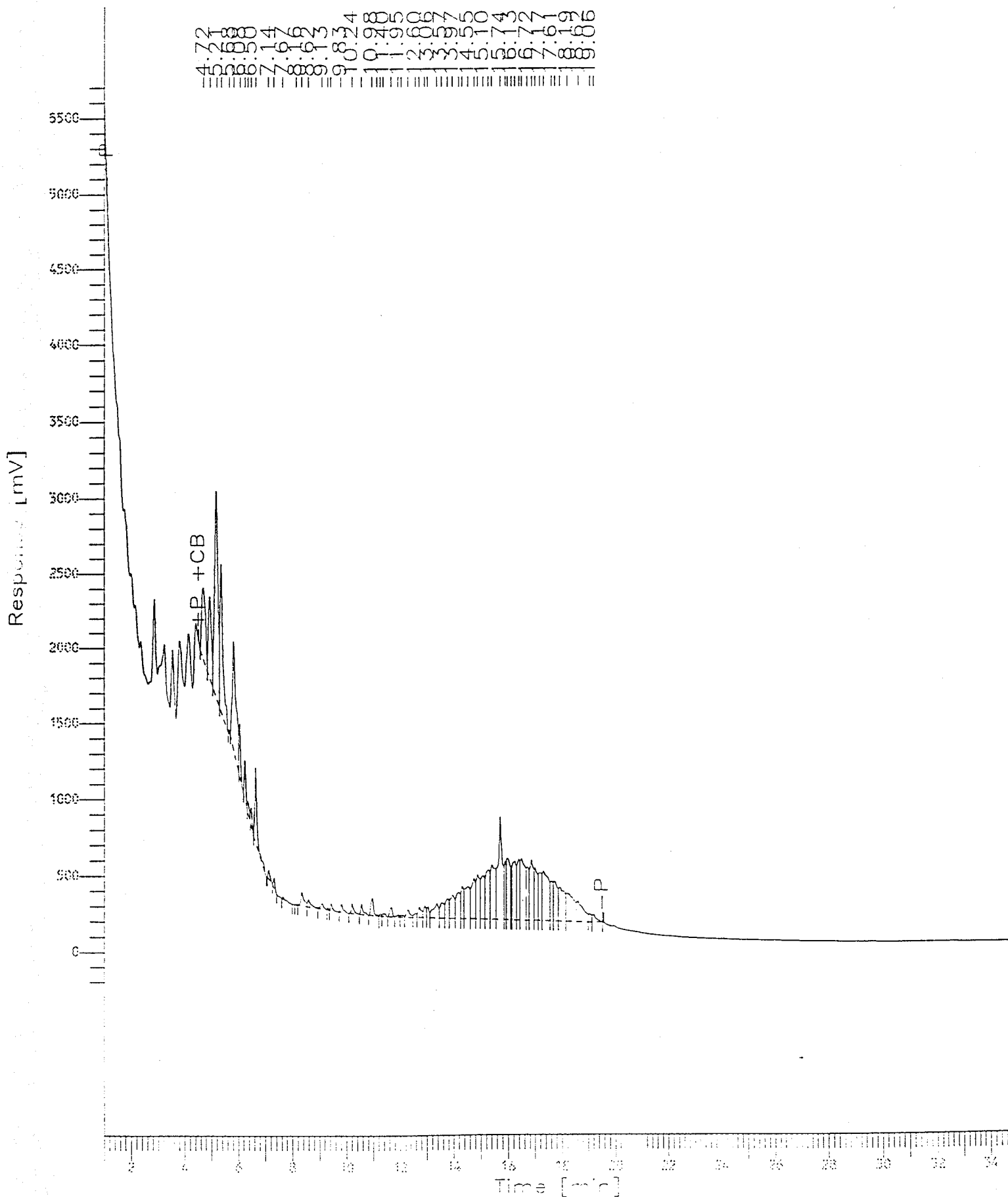
Report Stored in ASCII File: L:\data\tchrom\pest\varc\C__132.TX0

Chromatogram

Sample Name : 9406119-138
 FileName : l:\data\tchrom\pest\varc\C__132.raw
 Method : DIESEL.C.ins
 Start Time : 1.00 min
 Scale Factor: 1

Sample #: SC ;S
 Date : 06/16/94 03:19
 Time of Injection: 06/16/94 02:44
 Low Point : -228.19 mV
 High Point : 5703.84 mV
 End Time : 34.66 min
 Plot Offset: -228 mV
 Plot Scale: 5932 mV

Page 1 of 1



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Software Version: 3.2 <16C20>
Sample Name : 9406119-148 Time : 06/14/94 09:02
Sample Number: SC ;S Study : MODSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/13/94 21:58
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\DATA\TCHROM\PEST\VARC\C__098.raw
Result File : C:\DOS\rst013D.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : <none>

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

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DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	5.770	12196.80	2518.30	BV	1.0000e6	0.0415	25.9561	0.0000
2	6.027	177554.84	20404.95	VV	1.0000e6	0.0415	25.9561	0.0000
3	6.267	177709.53	15911.14	VV	1.0000e6	0.0415	25.9561	0.0000
4	6.351	209035.31	17102.69	VV	1.0000e6	0.0415	25.9561	0.0000
5	6.719	215610.00	15715.25	VV	1.0000e6	0.0415	25.9561	0.0000
6	6.840	109145.39	15670.10	VV	1.0000e6	0.0415	25.9561	0.0000
7	6.999	282204.06	16473.29	VV	1.0000e6	0.0415	25.9561	0.0000
8	7.237	193465.78	14776.39	VV	1.0000e6	0.0415	25.9561	0.0000
9	7.461	115687.97	12527.99	VV	1.0000e6	0.0415	25.9561	0.0000
10	7.633	77975.63	10251.74	VV	1.0000e6	0.0415	25.9561	0.0000
11	7.844	102558.75	8576.97	VV	1.0000e6	0.0415	25.9561	0.0000
12	7.982	103244.22	9846.86	VV	1.0000e6	0.0415	25.9561	0.0000
13	8.198	27827.27	3812.27	VE	1.0000e6	0.0415	25.9561	0.0000
14	8.427	2560.00	626.59	EB	1.0000e6	0.0415	25.9561	0.0000
15	8.946	347305.00	13441.83	BB	1.0000e6	0.0415	25.9561	0.0000
16	9.453	16735.00	1547.49	BB	9.9999e5	0.0415	25.9561	0.0000
17	10.263	5882.19	627.07	BV	1.0000e6	0.0415	25.9561	0.0000
18	10.765	24577.19	4096.69	VB	1.0000e6	0.0415	25.9561	0.0000
19	11.036	5638.44	827.65	BV	1.0000e6	0.0415	25.9561	0.0000
20	11.585	14811.25	3256.20	VB	1.0000e6	0.0415	25.9561	0.0000
21	11.753	3895.70	877.82	BV	1.0000e6	0.0415	25.9561	0.0000
22	11.887	36749.38	3800.52	VB	1.0000e6	0.0415	25.9561	0.0000
23	12.906	119869.69	7516.58	BB	1.0000e6	0.0415	25.9561	0.0000
24	13.681	1500.00	463.64	BV	1.0000e6	0.0415	25.9561	0.0000
25	13.793	12090.00	2195.89	VB	1.0000e6	0.0415	25.9561	0.0000
26	14.237	9178.13	1244.71	BV	9.9999e5	0.0415	25.9561	0.0000
27	14.623	5894.45	1242.04	VV	1.0000e6	0.0415	25.9561	0.0000
28	14.770	11252.66	1202.30	VB	1.0000e6	0.0415	25.9561	0.0000
29	15.144	520.00	294.80	BB	1.0000e6	0.0415	25.9561	0.0000
30	15.289	8955.00	1791.36	BB	1.0000e6	0.0415	25.9561	0.0000
31	15.778	1301485.50	240492.05	BB	1.0000e6	0.0415	25.9561	0.0000
32	16.294	31587.19	1156.15	BV	1.0000e6	0.0415	25.9561	0.0000
33	16.801	155421.64	7686.68	VV	1.0000e6	0.0415	25.9561	0.0000
34	17.072	95520.39	10611.53	VV	1.0000e6	0.0415	25.9561	0.0000
35	17.261	91354.10	13977.90	VV	1.0000e6	0.0415	25.9561	0.0000
36	17.388	328867.09	18917.28	VV	9.9999e5	0.0415	25.9561	0.0000
37	17.666	408989.59	19401.83	VV	9.9999e5	0.0415	25.9561	0.0000
38	18.045	366997.16	21643.71	VV	1.0000e6	0.0415	25.9561	0.0000
39	18.302	563895.44	21946.93	VV	9.9999e5	0.0415	25.9561	0.0000
40	18.748	380638.59	18113.39	VV	1.0000e6	0.0415	25.9561	0.0000
41	19.220	93573.79	11284.31	VB	1.0000e6	0.0415	25.9561	0.0000
		6249966.00	593872.88			1.7027	1064.2006	0.0007

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END

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Chromatogram

Page 1 of 1

Sample Name : 9406119-148

Sample #: SC ;S

FileName : L:\DATA\TCHROM\PEST\VARC\C__098.raw

Date : 06/14/94 09:02

Method : DIESEL.C.ins

Time of Injection: 06/13/94 21:58

Start Time : 1.00 min

End Time : 34.66 min

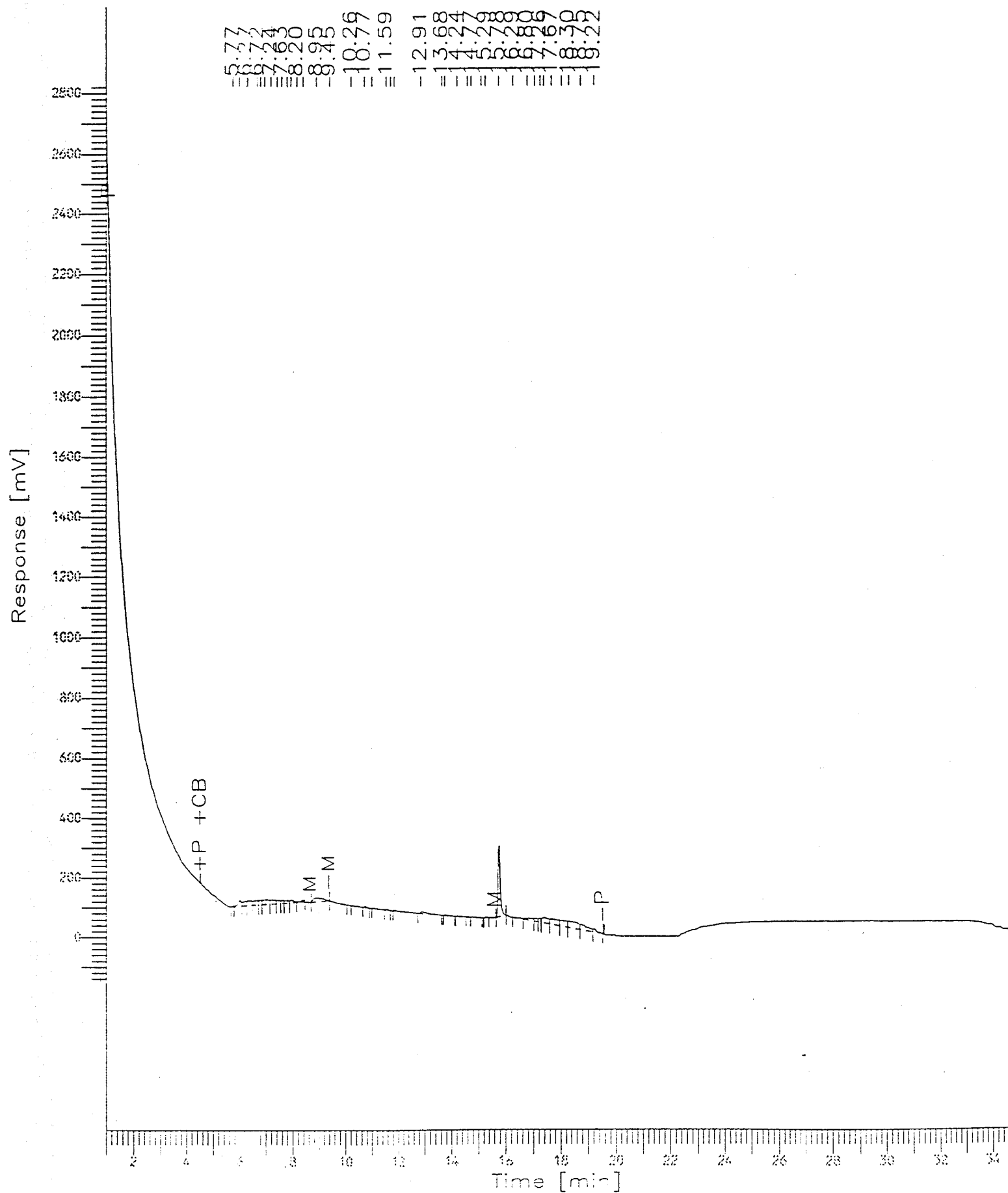
Low Point : -141.10 mV

High Point : 2822.27 mV

Scale Factor: 1

Plot Offset: -141 mV

Plot Scale: 2963 mV



Software Version: 3.2 <16C20>
Sample Name : 9406119-148 Time : 06/13/94 22:32
Sample Number: SC ;S Study : MODSD
Operator : SEG
Instrument : VARC Channel : A A/D μ V Range : 10000
AutoSampler : NONE
Pack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 06/13/94 21:58
Delay Time : 1.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : l:\data\tchrom\pest\varc\C__098.raw
Result File : l:\data\tchrom\pest\varc\C__098.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

Inj. Volume : 1 μ l Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 1.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [μ V-sec]	Height [V]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	5.770	17522.97	3653.58	BV	1.0000e6	0.0415	113.3574	0.0000
2	6.027	240164.38	24887.66	VV	1.0000e6	0.0415	113.3574	0.0000
3	6.267	258580.23	23519.94	VV	1.0000e6	0.0415	113.3574	0.0000
4	6.351	331971.78	25814.50	VV	9.9999e5	0.0415	113.3574	0.0000
5	6.719	389090.63	29229.93	VV	1.0000e6	0.0415	113.3574	0.0000
6	6.840	211864.22	30759.24	VV	1.0000e6	0.0415	113.3574	0.0000
7	6.999	595251.88	33635.36	VV	1.0000e6	0.0415	113.3574	0.0000
8	7.237	485643.75	35038.82	VV	1.0000e6	0.0415	113.3574	0.0000
9	7.461	350473.91	35710.13	VV	1.0000e6	0.0415	113.3574	0.0000
10	7.633	281456.72	35677.00	VV	1.0000e6	0.0415	113.3574	0.0000
11	7.844	433867.72	36758.53	VV	1.0000e6	0.0415	113.3574	0.0000
12	7.982	593685.94	39831.06	VV	1.0000e6	0.0415	113.3574	0.0000
13	8.198	396345.84	36615.18	VV	1.0000e6	0.0415	113.3574	0.0000
14	8.427	576647.50	36359.13	VV	9.9999e5	0.0415	113.3574	0.0000
15	8.946	2314362.25	53447.75	VV	1.0000e6	0.0415	113.3574	0.0000
16	9.453	1978840.25	47414.92	VV	1.0000e6	0.0415	113.3574	0.0000
17	10.263	902727.00	36718.16	VV	1.0000e6	0.0415	113.3574	0.0000
18	10.765	676236.56	37114.55	VV	1.0000e6	0.0415	113.3574	0.0000
19	11.036	897367.31	32324.22	VV	1.0000e6	0.0415	113.3574	0.0000
20	11.585	427061.47	32759.83	VV	1.0000e6	0.0415	113.3574	0.0000
21	11.753	177523.39	29856.88	VV	1.0000e6	0.0415	113.3574	0.0000
22	11.887	1594211.25	32367.96	VV	1.0000e6	0.0415	113.3574	0.0000
23	12.906	1478131.88	33305.81	VV	1.0000e6	0.0415	113.3574	0.0000
24	13.681	103302.42	25915.49	VV	1.0000e6	0.0415	113.3574	0.0000
25	13.793	696460.31	27592.71	VV	1.0000e6	0.0415	113.3574	0.0000
26	14.237	596904.75	26669.08	VV	1.0000e6	0.0415	113.3574	0.0000
27	14.623	264353.63	27076.97	VV	1.0000e6	0.0415	113.3574	0.0000
28	14.770	638789.75	27193.49	VV	9.9999e5	0.0415	113.3574	0.0000
29	15.144	106315.52	26728.60	VV	1.0000e6	0.0415	113.3574	0.0000
30	15.289	767788.81	29390.10	VV	1.0000e6	0.0415	113.3574	0.0000
31	15.778	2530271.00	273690.22	VE	1.0000e6	0.0415	113.3574	0.0000
32	16.294	863830.00	34185.37	EV	1.0000e6	0.0415	113.3574	0.0000
33	16.801	808990.63	36353.32	VV	1.0000e6	0.0415	113.3574	0.0000
34	17.072	325927.84	36416.45	VV	1.0000e6	0.0415	113.3574	0.0000
35	17.261	260706.67	37788.63	VV	1.0000e6	0.0415	113.3574	0.0000
36	17.388	745078.56	41394.34	VV	1.0000e6	0.0415	113.3574	0.0000
37	17.666	811564.81	38942.93	VV	1.0000e6	0.0415	113.3574	0.0000
38	18.045	633034.63	37177.63	VV	9.9999e5	0.0415	113.3574	0.0000
39	18.302	856061.63	34773.74	VV	1.0000e6	0.0415	113.3574	0.0000
40	18.748	548143.69	26232.25	VV	1.0000e6	0.0415	113.3574	0.0000
41	19.220	128768.96	14414.39	VB	9.9999e5	0.0415	113.3574	0.0000
		27295316.00	1.56e6			1.7027	4647.6548	0.0002

END

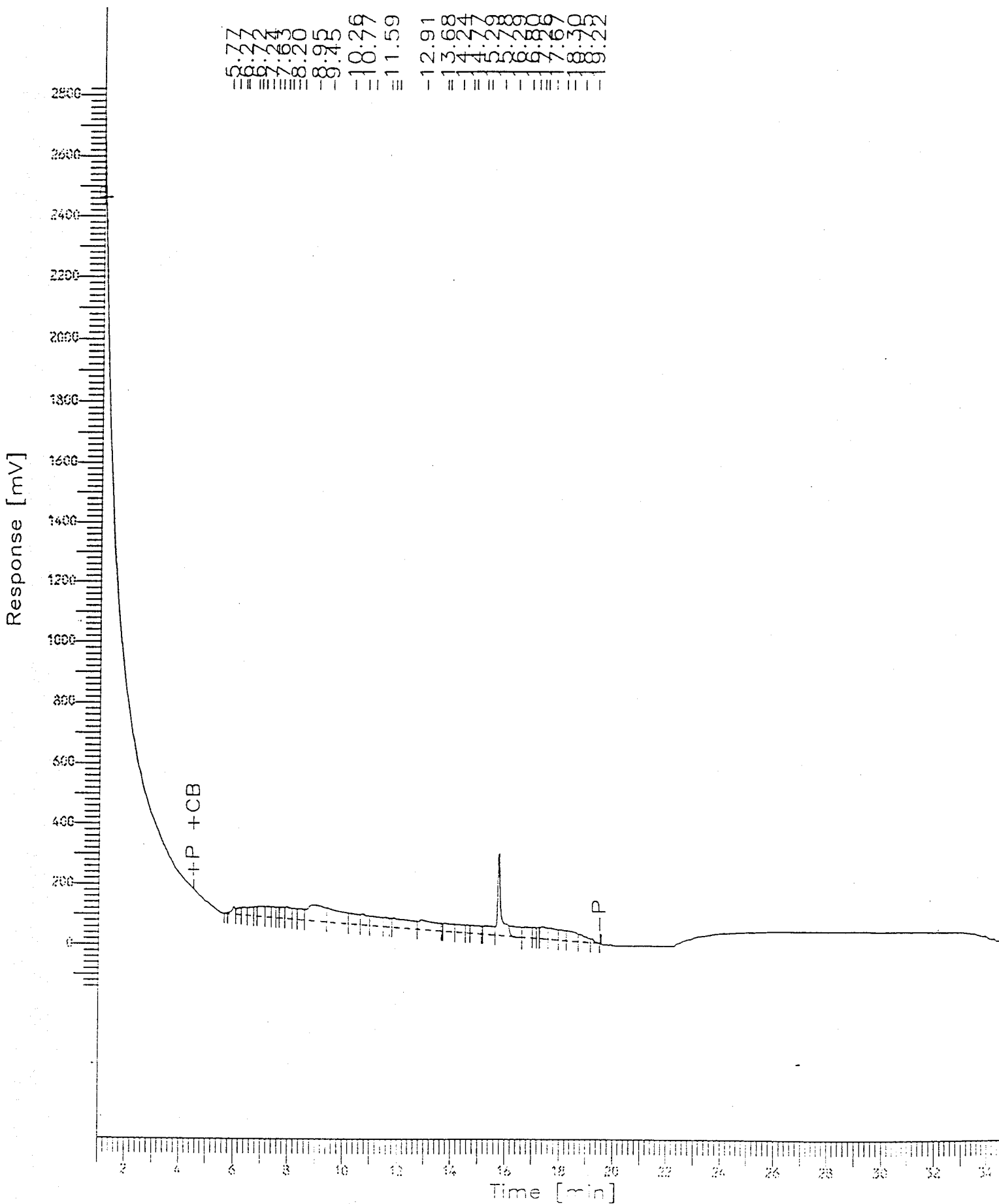
Chromatogram

Sample Name : 9406119-148
 FileName : l:\data\tchrom\pest\varc\C__098.raw
 Method : DIESEL.C.ins
 Start Time : 1.00 min
 Scale Factor: 1

End Time : 34.66 min
 Plot Offset: -141 mV

Sample #: SC ;S
 Date : 06/13/94 22:33
 Time of Injection: 06/13/94 21:58
 Low Point : -141.10 mV
 Plot Scale: 2963 mV
 High Point : 2822.27 mV

Page 1 of 1



```

=====
Software Version: 3.2 <16C20>
Sample Name : 9406119-14MSD      Time       : 06/16/94  01:16
Sample Number: KMD;S             Study      : MODSD
Operator    : SEG

Instrument  : VARC                Channel : A    A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial  : 0/0

```

```

Interface Serial # : 8328570191  Data Acquisition Time: 06/16/94  12:41
Delay Time       : 1.00  min.
End Time        : 34.66  min.
Sampling Rate    : 1.0000  pts/sec

```

```

Raw Data File : l:\data\tchrom\pest\varc\C__129.raw
Result File   : l:\data\tchrom\pest\varc\C__129.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File  : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File   : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.seq

```

```

Inj. Volume   : 1 ul              Area Reject   : 100.00
Sample Amount : 1.0000           Dilution Factor : 1.00

```

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	4.883	4164535.00	567473.94	BV	1.0000e6	0.0415	2538.4854	0.0000
2	5.227	724625.63	111137.35	VB	1.0000e6	0.0415	2538.4854	0.0000
3	5.414	276098.13	45143.03	BV	1.0000e6	0.0415	2538.4854	0.0000
4	5.583	333841.88	63512.77	VV	1.0000e6	0.0415	2538.4854	0.0000
5	5.714	1344128.75	165232.45	VV	1.0000e6	0.0415	2538.4854	0.0000
6	5.884	2018826.25	293088.00	VV	1.0000e6	0.0415	2538.4854	0.0000
7	5.989	2112549.25	227030.42	VV	1.0000e6	0.0415	2538.4854	0.0000
8	6.294	1887282.50	299991.38	VV	1.0000e6	0.0415	2538.4854	0.0000
9	6.491	8517722.00	1.36e6	VV	1.0000e6	0.0415	2538.4854	0.0000
10	6.668	5690140.00	685498.44	VV	1.0000e6	0.0415	2538.4854	0.0000
11	6.944	3502076.25	359511.09	VV	1.0000e6	0.0415	2538.4854	0.0000
12	7.220	8387100.00	942308.25	VV	1.0000e6	0.0415	2538.4854	0.0000
13	7.338	6285682.50	855146.25	VV	1.0000e6	0.0415	2538.4854	0.0000
14	7.631	18668050.00	2.32e6	VV	9.9999e5	0.0415	2538.4854	0.0000
15	7.800	11902022.00	1.28e6	VV	1.0000e6	0.0415	2538.4854	0.0000
16	8.040	5546617.00	879872.44	VV	1.0000e6	0.0415	2538.4854	0.0000
17	8.183	4543694.50	809893.44	VV	1.0000e6	0.0415	2538.4854	0.0000
18	8.256	4483858.50	968995.31	VV	1.0000e6	0.0415	2538.4854	0.0000
19	8.362	10126864.00	1.31e6	VV	9.9999e5	0.0415	2538.4854	0.0000
20	8.504	4561242.50	1.31e6	VV	1.0000e6	0.0415	2538.4854	0.0000
21	8.585	20307368.00	3.49e6	VV	1.0000e6	0.0415	2538.4854	0.0000
22	8.746	16485415.00	1.96e6	VV	1.0000e6	0.0415	2538.4854	0.0000
23	8.992	12770377.00	1.51e6	VV	1.0000e6	0.0415	2538.4854	0.0000
24	9.119	19654478.00	1.94e6	VV	1.0000e6	0.0415	2538.4854	0.0000
25	9.434	31177512.00	4.34e6	VV	1.0000e6	0.0415	2538.4854	0.0000
26	9.673	15749392.00	1.55e6	VV	1.0000e6	0.0415	2538.4854	0.0000
27	9.837	13840327.00	2.00e6	VV	1.0000e6	0.0415	2538.4854	0.0000
28	9.947	13594544.00	1.88e6	VV	1.0000e6	0.0415	2538.4854	0.0000
29	10.218	39398136.00	4.95e6	VV	1.0000e6	0.0415	2538.4854	0.0000
30	10.411	10473669.00	1.35e6	VV	1.0000e6	0.0415	2538.4854	0.0000
31	10.585	31929128.00	2.61e6	VV	1.0000e6	0.0415	2538.4854	0.0000
32	10.964	45488208.00	5.19e6	VV	1.0000e6	0.0415	2538.4854	0.0000
33	11.189	7175497.50	1.44e6	VV	1.0000e6	0.0415	2538.4854	0.0000
34	11.355	30672198.00	1.75e6	VV	1.0000e6	0.0415	2538.4854	0.0000
35	11.653	36663368.00	4.00e6	VV	1.0000e6	0.0415	2538.4854	0.0000
36	11.933	13564204.00	1.46e6	VV	1.0000e6	0.0415	2538.4854	0.0000
37	12.069	14778864.00	1.53e6	VV	1.0000e6	0.0415	2538.4854	0.0000
38	12.310	26841874.00	3.27e6	VV	1.0000e6	0.0415	2538.4854	0.0000
39	12.463	6699400.50	1.14e6	VV	1.0000e6	0.0415	2538.4854	0.0000
40	12.582	7682883.50	1.16e6	VV	1.0000e6	0.0415	2538.4854	0.0000
41	12.721	11533645.00	1.14e6	VV	1.0000e6	0.0415	2538.4854	0.0000
42	12.940	21823004.00	2.36e6	VV	1.0000e6	0.0415	2538.4854	0.0000
43	13.194	7592519.50	910435.94	VV	1.0000e6	0.0415	2538.4854	0.0000
44	13.384	8547309.00	852332.19	VV	1.0000e6	0.0415	2538.4854	0.0000
45	13.546	11181455.00	1.51e6	VV	1.0000e6	0.0415	2538.4854	0.0000
46	13.763	5748468.50	569044.44	VV	1.0000e6	0.0415	2538.4854	0.0000
47	13.961	5138991.00	504008.47	VV	1.0000e6	0.0415	2538.4854	0.0000
48	14.125	6903380.00	900906.50	VV	1.0000e6	0.0415	2538.4854	0.0000
49	14.331	2470997.75	306222.41	VV	1.0000e6	0.0415	2538.4854	0.0000
50	14.461	2396155.50	245272.11	VV	9.9999e5	0.0415	2538.4854	0.0000

51	14.686	4531522.00	379199.72	VV	1.0000e6	0.0415	2538.4854	0.0000
52	15.224	1380964.38	136834.09	VV	1.0000e6	0.0415	2538.4854	0.0000
53	15.737	1657642.13	365950.22	VB	1.0000e6	0.0415	2538.4854	0.0000
54	15.992	4145.00	2618.04	BB	9.9999e5	0.0415	2538.4854	0.0000
55	16.245	48399.69	14787.02	BB	1.0000e6	0.0415	2538.4854	0.0000
56	16.724	39510.00	9082.14	BB	1.0000e6	0.0415	2538.4854	0.0000
57	17.193	24842.19	5777.71	BV	1.0000e6	0.0415	2538.4854	0.0000
58	17.326	16727.66	2436.13	VB	1.0000e6	0.0415	2538.4854	0.0000
59	17.639	19780.00	4526.45	BB	9.9999e5	0.0415	2538.4854	0.0000
60	18.063	27545.47	5064.40	BV	1.0000e6	0.0415	2538.4854	0.0000
61	18.295	4367.89	422.08	VV	9.9999e5	0.0415	2538.4854	0.0000
62	18.507	17215.00	3668.78	VV	1.0000e6	0.0415	2538.4854	0.0000
63	18.612	62915.00	6712.95	VV	1.0000e6	0.0415	2538.4854	0.0000
64	18.926	12637.19	2016.04	VV	1.0000e6	0.0415	2538.4854	0.0000
65	19.210	33689.53	4665.03	VB	9.9999e5	0.0415	2538.4854	0.0000

6.11e8

7.37e7

2.6995

1.6500e5

0.0000

=====
END
=====

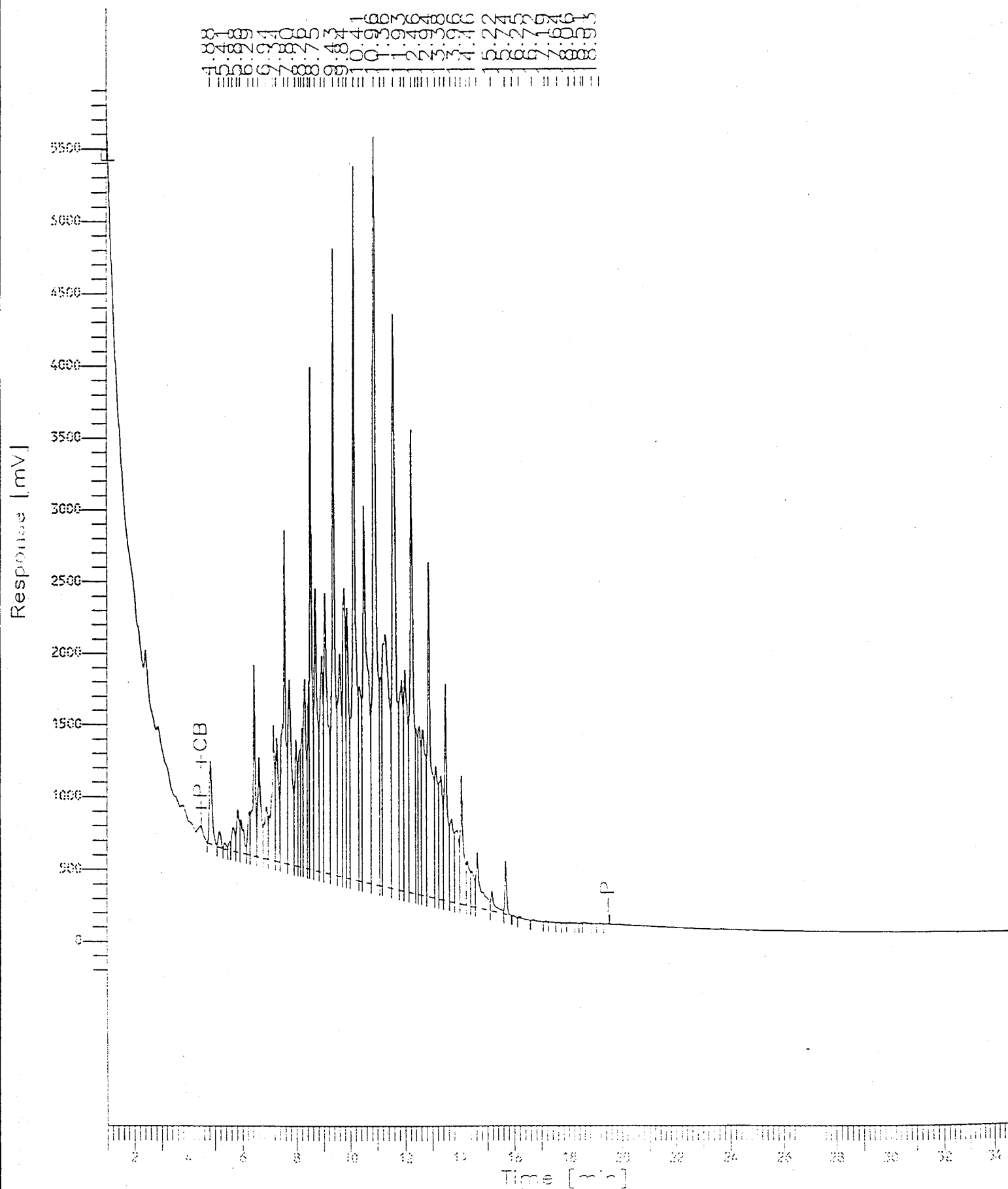
Report Stored in ASCII File: l:\data\tchrom\pest\varc\C__129.TX0

Chromatogram

Sample Name : 9406119-14MSD
FileName : l:\data\tchrom\pest\varc\C__129.raw
Method : DIESEL.C.ins
Start Time : 1.00 min
Scale Factor: 1

Sample #: KMD;S
Date : 06/16/94 01:16
Time of Injection: 06/16/94 12:41
Low Point : -234.18 mV
Plot Scale: 6164 mV

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Software Version: 3.2 <16C20>
Sample Name : 9406119-01B Time : 6/17/94 11:36 AM
Sample Number: SC ;S;25 Study : MODSD
Operator : SEG

Instrument : VARC Channel : A A/D mV Range : 10000
AutoSampler : NONE
Rack/Vial : 0/0

Interface Serial # : 8328570191 Data Acquisition Time: 6/17/94 10:24 AM
Delay Time : 3.00 min.
End Time : 34.66 min.
Sampling Rate : 1.0000 pts/sec

Raw Data File : L:\DATA\TCHROM\PEST\VARC\C__176.raw
Result File : C:\WINDOWS\TEMP\rst080A.rst
Instrument File: L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.ins
Process File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.prc
Sample File : L:\DATA\TCHROM\PEST\METHODS\DIESEL.C.smp
Sequence File : <none>

Inj. Volume : 1 ul Area Reject : 100.00
Sample Amount : 1.0000 Dilution Factor : 25.00

DIESEL Area Percent Report

Peak #	Ret Time [min]	Area [uV-sec]	Height [uV]	BL	Area/Amount	RF VALUE	DIESEL AMT. PPM	STD RF VALUE
1	5.109	275940.00	3025.98	BB	1.0000e6	0.0415	19006.8359	0.0000
2	7.243	11015.16	2146.12	BB	1.0000e6	0.0415	19006.8359	0.0000
3	7.568	29950.00	3955.12	BB	1.0000e6	0.0415	19006.8359	0.0000
4	7.866	24374.84	3516.12	BV	1.0000e6	0.0415	19006.8359	0.0000
5	8.009	10665.31	2167.43	VB	1.0000e6	0.0415	19006.8359	0.0000
6	8.197	21055.00	3917.33	BB	1.0000e6	0.0415	19006.8359	0.0000
7	8.340	6340.00	1728.72	BB	1.0000e6	0.0415	19006.8359	0.0000
8	8.497	1137.46	564.78	BV	1.0000e6	0.0415	19006.8359	0.0000
9	8.659	46849.30	8797.29	VV	1.0000e6	0.0415	19006.8359	0.0000
10	8.775	49759.14	9116.08	VV	1.0000e6	0.0415	19006.8359	0.0000
11	9.027	286038.59	22789.95	VV	9.9999e5	0.0415	19006.8359	0.0000
12	9.173	99465.86	21037.84	VV	1.0000e6	0.0415	19006.8359	0.0000
13	9.266	271646.25	29921.60	VV	9.9999e5	0.0415	19006.8359	0.0000
14	9.378	140940.31	28923.66	VV	1.0000e6	0.0415	19006.8359	0.0000
15	9.559	294712.97	36538.93	VV	1.0000e6	0.0415	19006.8359	0.0000
16	9.754	607124.81	53624.73	VV	1.0000e6	0.0415	19006.8359	0.0000
17	9.858	449714.69	59627.21	VV	1.0000e6	0.0415	19006.8359	0.0000
18	10.023	537880.94	62752.76	VV	9.9999e5	0.0415	19006.8359	0.0000
19	10.394	1644484.38	90569.21	VV	1.0000e6	0.0415	19006.8359	0.0000
20	10.674	1651923.88	114352.77	VV	1.0000e6	0.0415	19006.8359	0.0000
21	10.953	2198718.25	141168.67	VV	1.0000e6	0.0415	19006.8359	0.0000
22	11.116	1326381.38	153364.59	VV	1.0000e6	0.0415	19006.8359	0.0000
23	11.468	5834111.00	362099.06	VV	9.9999e5	0.0415	19006.8359	0.0000
24	11.635	1324730.88	227368.50	VV	1.0000e6	0.0415	19006.8359	0.0000
25	11.820	1793807.38	232451.98	VV	1.0000e6	0.0415	19006.8359	0.0000
26	12.182	6917105.00	308428.25	VV	1.0000e6	0.0415	19006.8359	0.0000
27	12.322	1761309.00	297855.88	VV	1.0000e6	0.0415	19006.8359	0.0000
28	12.521	4081892.50	329748.63	VV	1.0000e6	0.0415	19006.8359	0.0000
29	12.650	3654740.25	344967.66	VV	1.0000e6	0.0415	19006.8359	0.0000
30	12.975	5197095.50	359678.59	VV	1.0000e6	0.0415	19006.8359	0.0000
31	13.044	1753751.50	355478.75	VV	1.0000e6	0.0415	19006.8359	0.0000
32	13.138	1765746.25	356139.03	VV	1.0000e6	0.0415	19006.8359	0.0000
33	13.283	3585206.75	364328.19	VV	1.0000e6	0.0415	19006.8359	0.0000
34	13.470	3373581.25	386302.22	VV	1.0000e6	0.0415	19006.8359	0.0000
35	13.535	1544610.25	391423.28	VV	1.0000e6	0.0415	19006.8359	0.0000
36	13.674	3523115.00	399012.66	VV	1.0000e6	0.0415	19006.8359	0.0000
37	13.754	2817444.75	407955.22	VV	1.0000e6	0.0415	19006.8359	0.0000
38	13.943	3665484.00	410736.63	VV	1.0000e6	0.0415	19006.8359	0.0000
39	14.099	4646993.00	431330.19	VV	9.9999e5	0.0415	19006.8359	0.0000
40	14.297	3842692.50	430383.72	VV	1.0000e6	0.0415	19006.8359	0.0000
41	14.538	7481983.50	449496.06	VV	1.0000e6	0.0415	19006.8359	0.0000
42	14.685	4908934.50	449977.25	VV	1.0000e6	0.0415	19006.8359	0.0000
43	14.862	3196401.25	460135.38	VV	9.9999e5	0.0415	19006.8359	0.0000
44	14.949	2288132.00	458423.56	VV	1.0000e6	0.0415	19006.8359	0.0000
45	15.033	2770511.25	467998.19	VV	1.0000e6	0.0415	19006.8359	0.0000
46	15.113	1379883.00	461967.56	VV	9.9999e5	0.0415	19006.8359	0.0000
47	15.180	3203675.00	460463.75	VV	1.0000e6	0.0415	19006.8359	0.0000
48	15.289	2277966.25	457713.31	VV	1.0000e6	0.0415	19006.8359	0.0000
49	15.362	1836476.88	460255.84	VV	1.0000e6	0.0415	19006.8359	0.0000
50	15.436	3656243.00	463738.03	VV	1.0000e6	0.0415	19006.8359	0.0000

36.2

641.1771
64.12

51	15.825	5952752.50	468081.94	VV	1.0000e6	0.0415	19006.8359	0.0000
52	15.914	7261153.00	464262.63	VV	1.0000e6	0.0415	19006.8359	0.0000
53	16.061	5301376.00	448212.53	VV	1.0000e6	0.0415	19006.8359	0.0000
54	16.351	6648516.00	449311.38	VV	1.0000e6	0.0415	19006.8359	0.0000
55	16.498	5142093.50	441863.81	VV	1.0000e6	0.0415	19006.8359	0.0000
56	16.784	8020411.00	433044.84	VV	1.0000e6	0.0415	19006.8359	0.0000
57	17.014	1639743.63	411637.06	VV	1.0000e6	0.0415	19006.8359	0.0000
58	17.103	3370226.75	427714.38	VV	9.9999e5	0.0415	19006.8359	0.0000
59	17.215	6354752.50	425381.09	VV	1.0000e6	0.0415	19006.8359	0.0000
60	17.480	11773010.00	370765.75	VV	1.0000e6	0.0415	19006.8359	0.0000
61	18.152	3502072.25	287590.00	VV	1.0000e6	0.0415	19006.8359	0.0000
62	18.293	2407562.50	253473.14	VV	1.0000e6	0.0415	19006.8359	0.0000
63	18.515	5721806.00	242587.92	VV	1.0000e6	0.0415	19006.8359	0.0000
64	18.918	5920882.00	181380.81	VB	9.9999e5	0.0415	19006.8359	0.0000

1.83e8

1.71e7

2.6579

1.2164e6

0.0000

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END
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Chromatogram

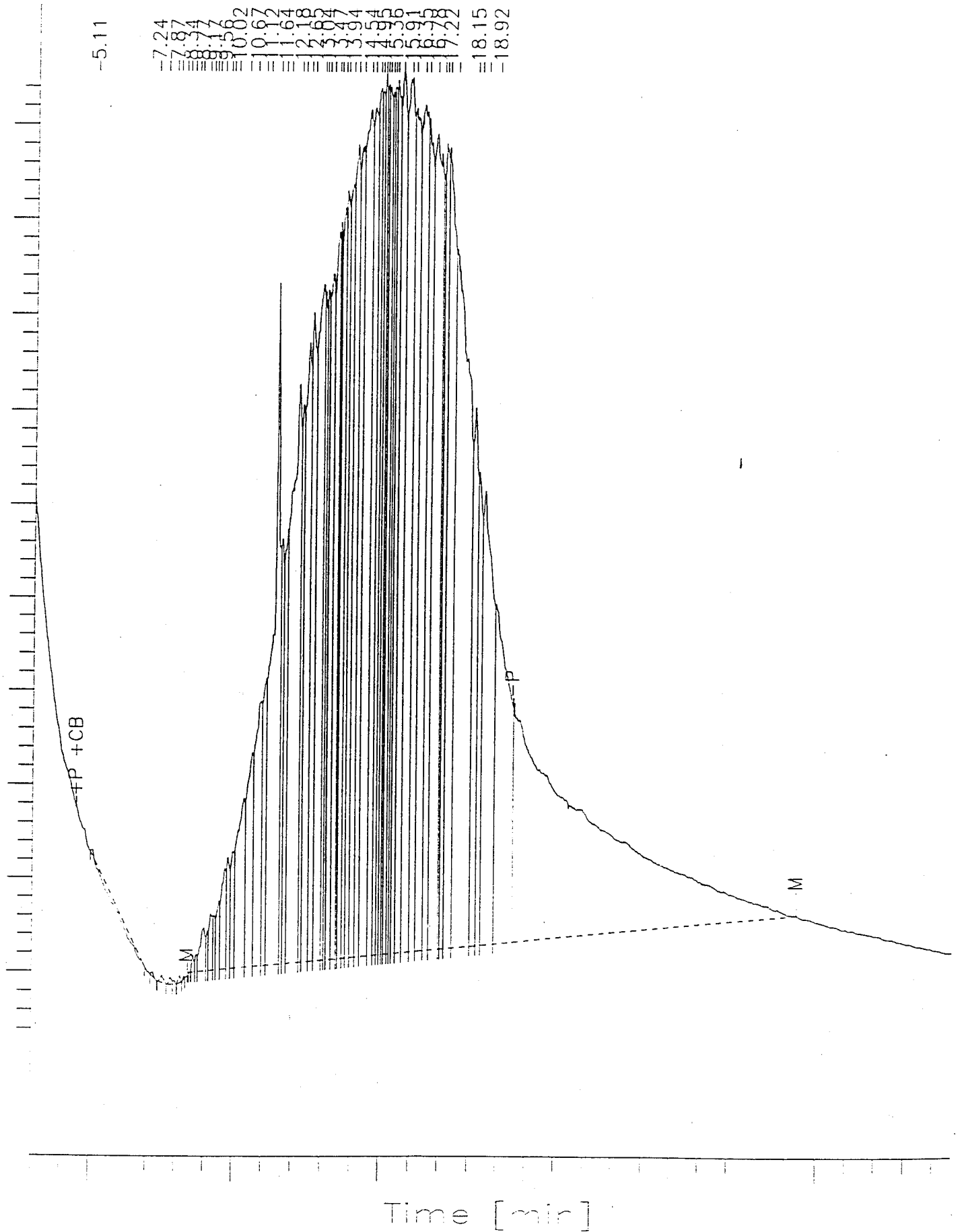
Sample Name : 9406119-018
 FileName : L:\DATA\TCHROM\PEST\VARC\C__176.raw
 Method : DIESEL.C.ins
 Start Time : 3.00 min
 Scale Factor: 1

End Time : 34.66 min
 Plot Offset: 119 mV

Sample #: SC ;S;25
 Date : 6/17/94 11:36 AM
 Time of Injection: 6/17/94 10:24 AM
 Low Point : 119.28 mV
 Plot Scale: 509 mV
 High Point : 628.03 mV

Page 1 of 1

Response [mV]





SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: 94-06-170

Approved for release by:

W. Scott Sample
S. Sample, Laboratory Director

Date: 6/27/94

Karen Satterfield
Karen Satterfield, Project Manager

Date: 6/21/94



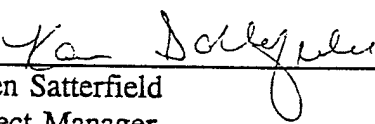
CASE NARRATIVE

WORK ORDER No.: 9406170

Southern Petroleum Laboratories (SPL) is pleased to present the results for laboratory analyses to Operational Technologies. The six (6) soil samples were received at our laboratory on June 04, 1994 at a temperature of 3 degrees Celsius. The following is a brief narrative of the laboratory analysis.

The samples were analyzed for lead by SW-846 method 7421. All results are on an as received basis. There were no deviations from the method. All of the quality control data was within limits for this project.

If I can be of further assistance or answer any questions, please do not hesitate to contact me at (713) 660-0901 ext. 114.



Karen Satterfield
Project Manager



Certificate of Analysis No. 9406170-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Luis Ibarra

DATE: 06/13/94

PROJECT: Soil Analysis
SITE: Zanesville, Ohio
SAMPLED BY: Operational Technologies
SAMPLE ID: B-003 BH INT 1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/03/94 08:15:00
DATE RECEIVED: 06/04/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ET Date: 06/08/94	9	1	wt. %	
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/08/94	06/08/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/10/94	7.9	0.4	mg/Kg	

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406170-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Luis Ibarra

DATE: 06/13/94

PROJECT: Soil Analysis
SITE: Zanesville, Ohio
SAMPLED BY: Operational Technologies
SAMPLE ID: B-003 BH INT 2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/03/94 08:25:00
DATE RECEIVED: 06/04/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ET Date: 06/08/94	14	1	wt. %	
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/08/94	06/08/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/10/94	4.9	0.4	mg/Kg	

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406170-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Luis Ibarra

DATE: 06/13/94

PROJECT: Soil Analysis
SITE: Zanesville, Ohio
SAMPLED BY: Operational Technologies
SAMPLE ID: B-002 BH INT 1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/03/94 08:50:00
DATE RECEIVED: 06/04/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ET Date: 06/08/94	4	1	wt. %	
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/08/94	06/08/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/10/94	5.3	0.4	mg/Kg	

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406170-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Luis Ibarra

DATE: 06/13/94

PROJECT: Soil Analysis
SITE: Zanesville, Ohio
SAMPLED BY: Operational Technologies
SAMPLE ID: B-002 BH INT 2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/03/94 09:05:00
DATE RECEIVED: 06/04/94

ANALYTICAL DATA			
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ET Date: 06/08/94	11	1	wt. %
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/08/94	06/08/94		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/10/94	6.2	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406170-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Luis Ibarra

DATE: 06/13/94

PROJECT: Soil Analysis
SITE: Zanesville, Ohio
SAMPLED BY: Operational Technologies
SAMPLE ID: B-001 BH INT 1

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/03/94 09:18:00
DATE RECEIVED: 06/04/94

ANALYTICAL DATA				
PARAMETER	RESULTS	DETECTION LIMIT	UNITS	
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ET Date: 06/08/94	14	1	wt. %	
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/08/94	06/08/94			
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/10/94	43	8	mg/Kg	

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



Certificate of Analysis No. 9406170-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Luis Ibarra

DATE: 06/13/94

PROJECT: Soil Analysis
SITE: Zanesville, Ohio
SAMPLED BY: Operational Technologies
SAMPLE ID: B-001 BH INT 2

PROJECT NO: 1308-191
MATRIX: SOIL
DATE SAMPLED: 06/03/94 09:30:00
DATE RECEIVED: 06/04/94

ANALYTICAL DATA			
PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: ET Date: 06/08/94	11	1	wt. %
Acid Digestion-Solid, GF METHOD 3050 *** Analyzed by: AM Date: 06/08/94	06/08/94		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 06/10/94	42	8	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance
with EPA guidelines for quality assurance.



*** SPL QUALITY CONTROL REPORT ***
TOTAL LEAD

SPL sample Id: 9405D46-32A
Matrix: SOIL

Reported on: 06/14/94
Analyzed on: 06/10/94

This sample was randomly selected for use in the SPL quality control program. One in ten samples is fortified with a known concentration of the substance being analyzed and one in ten samples is analyzed in duplicate. The result are as follows:

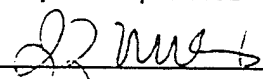
-- SPIKE ANALYSIS --

Sample Id	Blank Value	Spike Added mg/L	Original Sample Concentration mg/Kg	MS Concentration mg/Kg	MS % Rec
9405D46-32A	ND	.040	.0519	.0869	87

-- SPIKE DUPLICATE ANALYSIS --

Sample Id	Spike Added mg/L	MSD Concentration mg/Kg	MSD % Rec	% RPD
9405D46-32A	.040	.0863	86	2

SPL, Incorporated


Idelis Williams, QC Officer



Wet Chemistry QA/QC Validation Report

Test Name: moistureSAM Test Code: moisepDate: 6/8/94Analyst: STMethod GravimetricTime: 12:00pmMatrix ☐ Liquid ☒ Soil ☐ Other# of Samples in Batch: 24Reporting Units: % weight

SPL Sample #'s in Batch:

9406086 - 1B → 3B	9406246 - 4A
9406224 - 2C, 10C → 13C, 18C	9406160 - 1B
9406170 - 1A → 6A	9406220 - 1D → 2D
9406199 - 1C	9406221 - 1D → 4D

Standards	Actual Concentration	Theoretical Concentration	Percent Recovery	QC Limits (**) (Mandatory)	
				Upper Limit	Lower Limit
Blank					
Check Standard 1					
Check Standard 2					
Check Standard 3					
LCS (Outside Source)					

DUPLICATES

QA/QC Duplicate SPL Sample ID	Sample Result <1>	Sample Result <2>	Relative Percent Difference	QC LIMITS (**) (Advisory)	
				Relative Percent Difference Max.	
9406224 - 18C	18	19	5.4	30.4	
9406170 - 6A	11	11	0		
9406220 - 2D	11	11	0		
9406221 - 4D	23	22	4.4	✓	

Relative Percent Difference (RPD) Calculation:

$$RPD = \frac{<1> - <2>}{(<1> + <2>) \times 0.5} \times 100$$

(**) = Source: SPL Houston Historical Data

* = Indicates Value Outside QA/QC Range

Reviewed By: [Signature]Date: 6/9/94Approved By: [Signature]Date: 6/9/94

Idelis Williams, QC Officer

Date: 6/10/94

UPC 11

PROGRAMMING MODE INSTRUMENT USER METH # 34 - PB DATE: 94/06/10
ELEMENT: PB WAVELENGTH (NM): 283.3 SLIT (NM): 0.7
PYRO COATED TUBE WITH PLATFORM - MAX POWER HEATING - GAS STOP - MATRIX MOD.
PRETREAT TEMP: 850 ATOMIZE TEMP: 1800 CHARACTER, MASS (PG) 12.0

- 1. TECHNIQUE: ZEEMAN
- 2. LAMP CURRENT (MA): 10
- 3. SIGNAL PROCESSING: PEAK AREA
- 4. CALIBRATION: AUTO SELECT
- 5. TIME (SECONDS): 5.0
- 6. READ DELAY (SECONDS): 0.0
- 7. SCREEN FORMAT: 1.0 GRAPHICS
- 8. PRINTER: MAIN SUPPL
- 9. RECORDER SIGNAL: 0.2 CONT ABS
- 10. RECORDER EXP: 1000
- 11. STATISTICS: 2 AVERAGE & CV
- 12. NOMINAL WEIGHT 1.0
- 13. ROLLOVER(ABS): 1.500
- 14. BG SCALE: 1.0

15. S1: 25.0 16. S2: 50.0 17. S3: 100.0
18. S4: 19. S5: 20. S6:
21. S7: 22. S8: 23. RSLP: 50.0

6610A

TIME: 11:29

PB

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.010 ZAA 0.010 BG 0.005
0.010 0.009 0.002

READ: 0.000

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.010 ZAA 0.009 BG 0.004
0.012 0.008 0.003

READ: -0.001

MEAN= -0.001 STD.DEV.=

COEF.VAR.= 64.20 %

0.000 AUTOZERO

PB

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.296 ZAA 0.238 BG 0.061
0.100 0.120 0.034

READ: 0.117

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.296 ZAA 0.239 BG 0.061
0.159 0.127 0.034

READ: 0.119

MEAN= 0.118 STD.DEV.=

COEF.VAR.= 0.96 %

25.0 STANDARD

PB

Oper Tech 9406170

51

HEAD: 47.3

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.524 0.414 0.115
0.300 0.233 0.067

READ: 47.5

MEAN= 47.4 STD.DEV.= COEF.VAR.= 0.37 %

47.4 E-50: READING GREATER THAN HIGHEST STANDARD

50.0 STANDARD 2

PB

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.506 0.692 0.221
0.536 0.416 0.120

READ: 100.7

(CONTINUED)

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.890 0.678 0.216
0.533 0.414 0.119

READ: 100.2

MEAN= 100.4 STD.DEV.= COEF.VAR.= 0.38 %

100.4 E-50: READING GREATER THAN HIGHEST STANDARD

100.0 STANDARD 3

PB 0005

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.507 0.398 0.109
0.294 0.233 0.061

READ: 50.2

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.500 0.392 0.109
0.293 0.232 0.061

READ: 50.0

MEAN= 50.1 STD.DEV.= COEF.VAR.= 0.29 %

PB 0006

PEAK HEIGHT (ABSORBANCE) AA ZAA BG
PEAK AREA (ABS-SECONDS) 0.007 0.007 0.002

PEAK AREA (ABS-SECONDS)

PEAK HEIGHT (ABSORBANCE)		AA		ZAA		BG
PEAK AREA (ABS-SECONDS)		0.006		0.008		0.003
		0.008				0.001
READ:	-0.2					
MEAN=	-0.1					
STD.DEV.=						
COEF.VAR.=	99.99 %					

PB	0007					
PEAK HEIGHT (ABSORBANCE)		AA		ZAA		BG
PEAK AREA (ABS-SECONDS)		0.006		0.007		0.003
		0.003		0.008		0.001
READ:	-0.1					
MEAN=	-0.2					
STD.DEV.=						
COEF.VAR.=	42.02 %					

PEAK HEIGHT (ABSORBANCE)		AA		ZAA		BG
PEAK AREA (ABS-SECONDS)		0.433		0.344		0.091
		0.233		0.191		0.048
READ:	39.9					
MEAN=	40.3					
STD.DEV.=						
COEF.VAR.=	1.46 %					

PB	0009					
PEAK HEIGHT (ABSORBANCE)		AA		ZAA		BG
PEAK AREA (ABS-SECONDS)		0.436		0.345		0.092
		0.244		0.194		0.050
READ:	40.6					
MEAN=	40.3					
STD.DEV.=						
COEF.VAR.=	1.46 %					

PB	0009					
PEAK HEIGHT (ABSORBANCE)		AA		ZAA		BG
PEAK AREA (ABS-SECONDS)		0.012		0.010		0.010
		0.022		0.013		0.009
READ:	0.9					
MEAN=	0.7					
STD.DEV.=						
COEF.VAR.=	35.40 %					

PB	0010					
PEAK HEIGHT (ABSORBANCE)		AA		ZAA		BG
PEAK AREA (ABS-SECONDS)		0.014		0.009		0.012
		0.020		0.011		0.014
READ:	0.5					
MEAN=	0.7					
STD.DEV.=						
COEF.VAR.=	35.40 %					

PB	0010					

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

0.434 0.344 0.090
0.244 0.198 0.046

READ: 41.5

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.426 0.337 0.089
0.246 0.197 0.049

READ: 41.4

MEAN= 41.5 STD.DEV.=

COEF.VAR.= 0.22 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.065 0.054 0.012
0.042 0.035 0.003

READ: 6.1

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.562 0.441 0.121
0.316 0.251 0.065

READ: 54.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.567 0.445 0.123
0.300 0.242 0.064

READ: 52.5

MEAN= 53.6 STD.DEV.=

COEF.VAR.= 2.97 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.546 0.423 0.119
0.293 0.239 0.061

READ: 51.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.503 0.396 0.109
0.287 0.235 0.056

READ: 50.6

MEAN= 51.1 STD.DEV.=

COEF.VAR.= 1.49 %

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.005 0.007 0.001
0.000 0.007 -0.008

READ: -0.2

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA 0.003 0.005 0.002
0.000 0.005 0.002

MEAN= -0.7 STD.DEV.= COEF.VAR.= 29.05 %

PEAK HEIGHT (ABSORBANCE) 192.4
PEAK AREA (ABS-SECONDS) 208.0

READ: 95.9
PEAK HEIGHT (ABSORBANCE) 1.070
PEAK AREA (ABS-SECONDS) 0.520

READ: 96.5
PEAK HEIGHT (ABSORBANCE) 1.056
PEAK AREA (ABS-SECONDS) 0.516

READ: 49.6
PEAK HEIGHT (ABSORBANCE) 0.459
PEAK AREA (ABS-SECONDS) 0.431

READ: 51.3
PEAK HEIGHT (ABSORBANCE) 0.496
PEAK AREA (ABS-SECONDS) 0.473

READ: 86.8
PEAK HEIGHT (ABSORBANCE) 0.645
PEAK AREA (ABS-SECONDS) 0.645

READ: 82.5
PEAK HEIGHT (ABSORBANCE) 0.742
PEAK AREA (ABS-SECONDS) 0.662

READ: 92.5
PEAK HEIGHT (ABSORBANCE) 0.800
PEAK AREA (ABS-SECONDS) 0.735

READ: 83.1					
MEAN= 87.8	STD.DEV.=		COEF.VAR.= 9.72	%	

PB 0039					
PEAK HEIGHT (ABSORBANCE)	AA	ZAA	BA		
PEAK AREA (ABS-SECONDS)	0.656	0.509	0.147		
	0.698	0.373	0.323		
READ: 87.7					

PEAK HEIGHT (ABSORBANCE)	AA	ZAA	BA		
PEAK AREA (ABS-SECONDS)	0.526	0.414	0.115		
	0.505	0.309	0.255		
READ: 69.7					

MEAN= 78.5	STD.DEV.=		COEF.VAR.= 18.41	%	

PB 0040					
PEAK HEIGHT (ABSORBANCE)	AA	ZAA	BA		
PEAK AREA (ABS-SECONDS)	0.335	0.266	0.070		
	0.355	0.220	0.135		
READ: 46.9					

PEAK HEIGHT (ABSORBANCE)	AA	ZAA	BA		
PEAK AREA (ABS-SECONDS)	0.457	0.361	0.096		
	0.356	0.339	0.117		
READ: 51.6					

MEAN= 46.3	STD.DEV.=		COEF.VAR.= 7.42	%	

PB 0041					
PEAK HEIGHT (ABSORBANCE)	AA	ZAA	BA		
PEAK AREA (ABS-SECONDS)	0.406	0.322	0.248		
	0.632	0.247	0.435		
READ: 53.7					

PEAK HEIGHT (ABSORBANCE)	AA	ZAA	BA		
PEAK AREA (ABS-SECONDS)	0.392	0.313	0.242		
	0.609	0.242	0.425		
READ: 52.5					

MEAN= 53.1	STD.DEV.=		COEF.VAR.= 1.72	%	

PB 0042					
PEAK HEIGHT (ABSORBANCE)	AA	ZAA	BA		
PEAK AREA (ABS-SECONDS)	0.494	0.392	0.105		

06170-1A

- 2A

- 3A

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.546
0.294

BG
0.119
0.006

READ: 48.9

MEAN= 48.1 STD.DEV.=

COEF.VAR.= 2.64 %

PE 0043

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.008
0.010

ZAA
0.008
0.007

BG
0.006
0.003

READ: -0.3

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.006
0.003

ZAA
0.007
0.006

BG
0.005
0.002

READ: -0.5

MEAN= -0.4 STD.DEV.=

COEF.VAR.= 33.28 %

PE 0044

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.438
0.340

ZAA
0.391
0.245

BG
0.107
0.054

READ: 53.4

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.587
0.449

ZAA
0.458
0.314

BG
0.150
0.135

READ: 71.3

MEAN= 62.2 STD.DEV.=

COEF.VAR.= 22.65 %

PE 0045

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
2.309
1.315

ZAA
1.540
1.173

BG
0.779
0.643

READ: 492.1

E-87: VALUE GREATER THAN ROLLOVER ABSORBANCE

PE 0045

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.280
0.150

ZAA
0.229
0.111

BG
0.053
0.039

READ: 21.6

PEAK HEIGHT (ABSORBANCE)
PEAK AREA (ABS-SECONDS)

AA
0.235
0.152

ZAA
0.232
0.111

BG
0.054
0.042

READ: 21.5

-5A 20X

MEAN= 37.2 STD. DEV.= 0.52 %

PB 0050

PEAK HEIGHT (ABSORBANCE) AA 0.061 ZAA 0.007 BG 0.060
PEAK AREA (ABS-SECONDS) 0.137 0.009 0.129

READ: -0.1

PEAK HEIGHT (ABSORBANCE) AA 0.054 ZAA 0.008 BG 0.064
PEAK AREA (ABS-SECONDS) 0.146 0.008 0.139

READ: -0.1

MEAN= -0.1 STD. DEV.= 61.02 %

PB 0051

PEAK HEIGHT (ABSORBANCE) AA 0.204 ZAA 0.145 BG 0.066
PEAK AREA (ABS-SECONDS) 0.330 0.153 0.177

READ: 30.9

PEAK HEIGHT (ABSORBANCE) AA 0.204 ZAA 0.146 BG 0.064
PEAK AREA (ABS-SECONDS) 0.329 0.154 0.176

READ: 31.2

MEAN= 31.1 STD. DEV.= 0.56 %

PB 0052

PEAK HEIGHT (ABSORBANCE) AA 0.201 ZAA 0.141 BG 0.064
PEAK AREA (ABS-SECONDS) 0.323 0.150 0.173

READ: 30.4

PEAK HEIGHT (ABSORBANCE) AA 0.202 ZAA 0.145 BG 0.064
PEAK AREA (ABS-SECONDS) 0.328 0.152 0.170

READ: 30.8

MEAN= 30.6 STD. DEV.= 1.03 %

PB 0053

PEAK HEIGHT (ABSORBANCE) AA 0.515 ZAA 0.403 BG 0.113
PEAK AREA (ABS-SECONDS) 0.272 0.212 0.050

READ: 45.1

PEAK HEIGHT (ABSORBANCE) AA 0.573 ZAA 0.448 BG 0.126

MEAN= 48.9 STD.DEV.= COEF.VAR.= 12.29 %

PB 0054

PEAK HEIGHT (ABSORBANCE) AA 0.010 ZAA 0.010 BG 0.002
PEAK AREA (ABS-SECONDS) 0.000 0.004 -0.004

READ: -0.8

PEAK HEIGHT (ABSORBANCE) AA 0.010 ZAA 0.010 BG 0.003
PEAK AREA (ABS-SECONDS) 0.002 0.003 -0.001

READ: -1.0

MEAN= -0.9 STD.DEV.= COEF.VAR.= 15.34 %
